

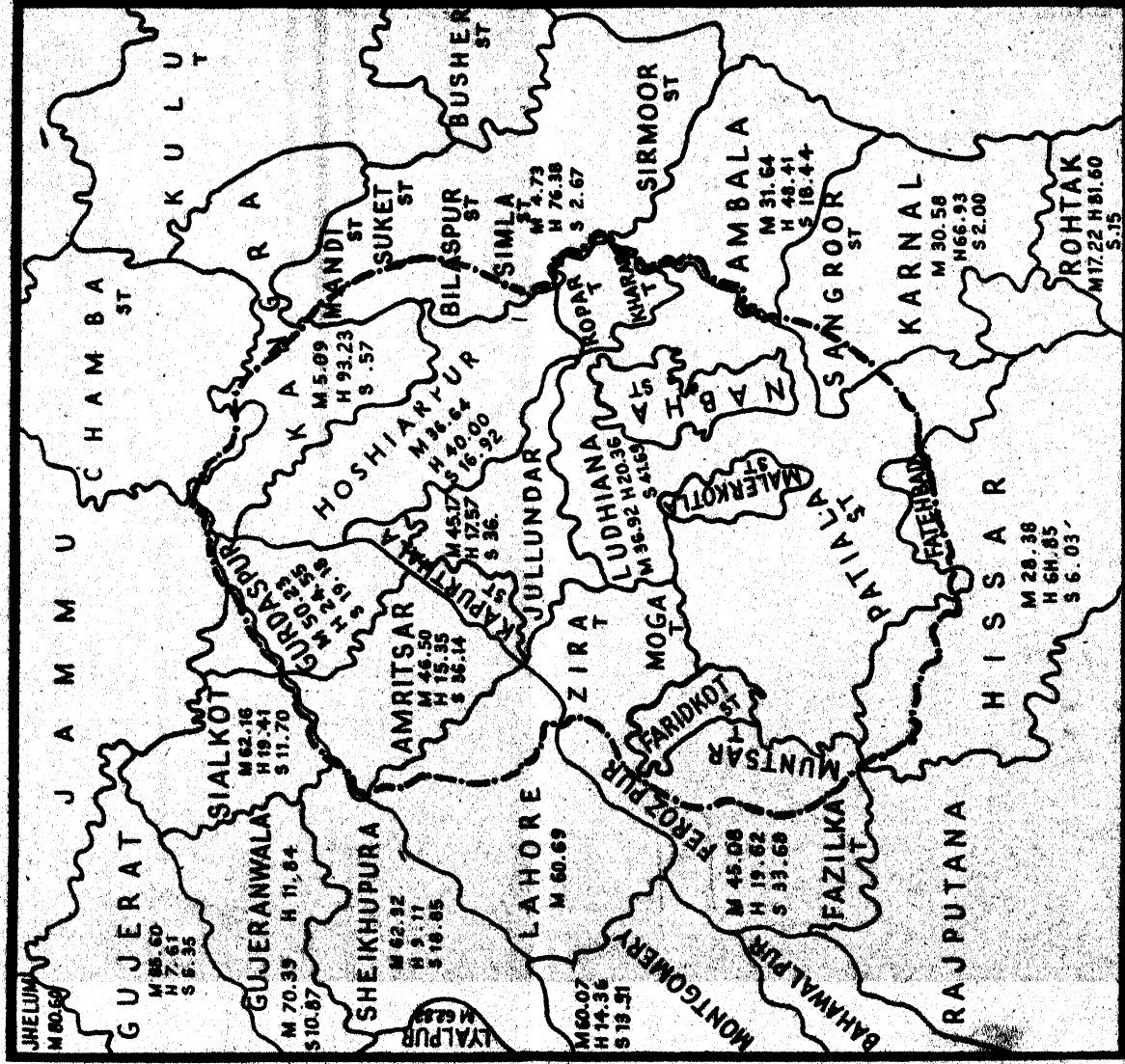
THE BASIS OF PAKISTAN



THE SIKH HOMELAND

PROPORTION OF SIKH, HINDU, AND MUSLIM POPULATION

S=SIKHS, H=HINDUS, M=MUSLIMS, T=TAHSIL, ST=STATE



MAP NO.3.

By the same Author

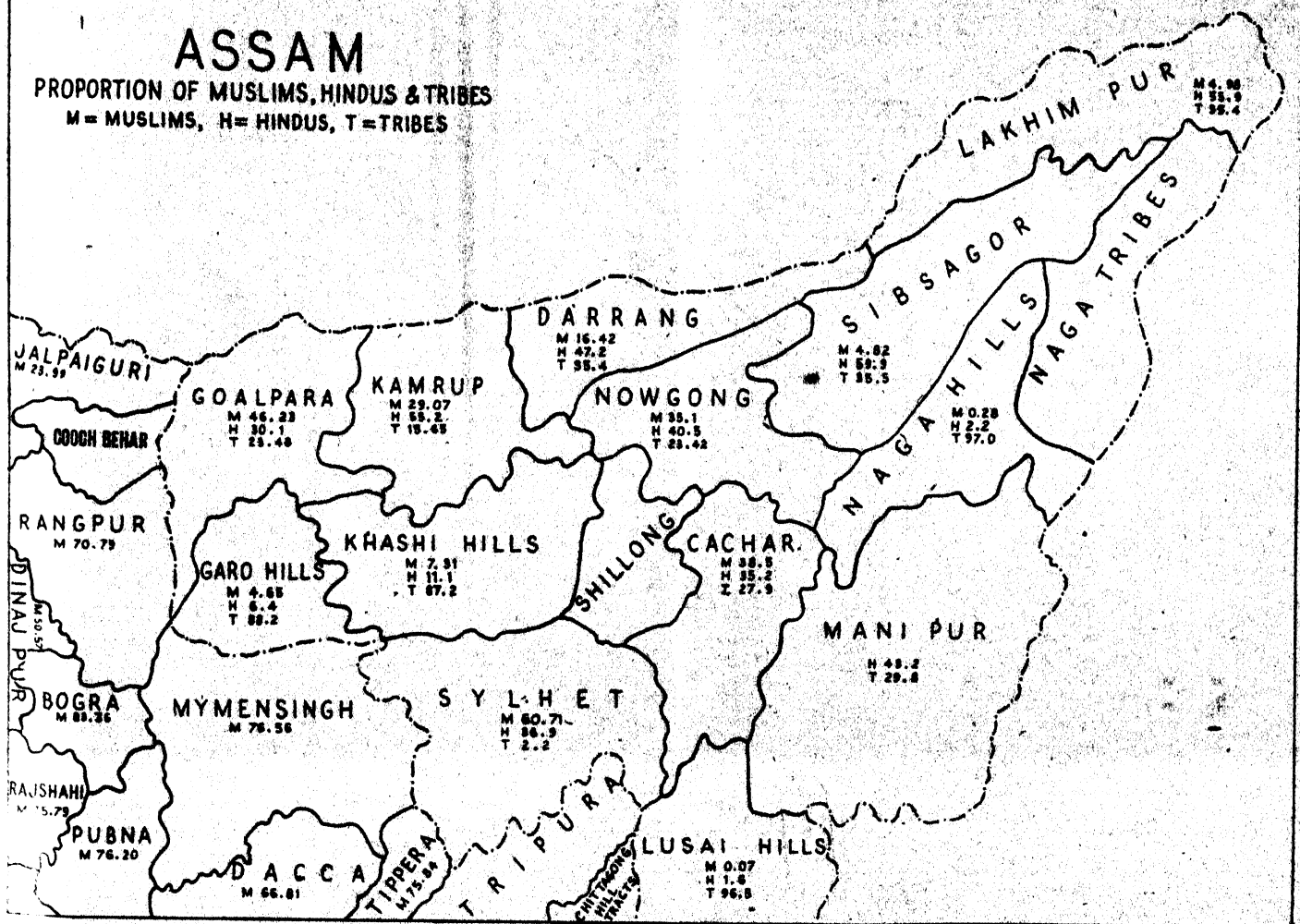
MUSLIM CONTRIBUTIONS TO GEOGRAPHY

(SH. M. ASHRAF, LAHORE).

ASSAM

PROPORTION OF MUSLIMS, HINDUS & TRIBES

M = MUSLIMS, H = HINDUS, T = TRIBES



MAP NO.4.

THE BASIS OF PAKISTAN

BY

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Professor of Geography, Islamia College, Calcutta.

WITH NINE MAPS

AND A

FOREWORD

BY

THE HON'BLE MR. H. S. SUHRAWARDY

1947

CALCUTTA

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To
Zulfia and A. Jahan

Foreword

This treatise on Pakistan deals with the problems of Pakistan State from a new angle. There has been considerable controversy from time to time on the economic sufficiency of such a State and Prof. Nafis Ahmad demonstrates with clarity and commendable objectivity that the mineral and economic resources of the lands lying within the proposed State of Pakistan are sufficient to make the State self-supporting and powerful. He deals with the subject in a systematic and scientific manner and, while discussing agricultural and industrial development and the mineral and power resources of the State, draws our attention to the fact that chiefly in the Potwar plateau there are rich deposits of rock salts, gypsum, petroleum, sulphur, coal and iron to meet the requirements of a modern State. The knowledge at our disposal is admittedly insufficient. We have neglected geography and geology and I am certain that a more intensive survey of our lands is bound to bring to earth far greater resources than we have imagined.

Pakistan, however, does not merely connote a combination of States or lands but a mode of Government where Islamic principles of equality and democracy will be combined with a wise scheme of economic and industrial development for the benefit of the common people

in which there will be no distinction between castes and creeds. It is impossible now to visualize that Hindustan and Pakistan will always exist in a perpetual state of hatred and conflict. Once the Muslim nation settles down to its task, it is certain, so Prof. Nafis Ahmad believes, that the people of Hindustan will realise that India's destiny lies in developing a pattern of multinational State like Russia. This must be the hope of all of us. Friendliness and co-operation must be the essence of the relationship between neighbouring states and it is well that we should work to this end. I am glad that Prof. Nafis Ahmad has endeavoured to present Pakistan in an objective and scientific manner and remove from it the glosses and varnish of emotion and sentiment. Pakistan to the Muslims has now become a matter of belief. The more the subject is studied, the more do we feel that this is the only solution to our problems.

I am glad that I have had the opportunity of writing this foreword.

CALCUTTA,
MARCH 4th 1947

H. S. SUHRAWARDY.

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PREFACE

This is a simple book about a not too simple subject. It is simple in part because it sets aside much in the way of 'sentimental nationalism', political controversy, socio-economic hair splitting and argument about the fundamentals of the democratic principles. It concerns itself largely with the economic and geographical aspects of the Pakistan scheme. The reasoning, that the Pakistan conception is repugnant simply because it is meant to 'divide' India, does not convince the author. There have been 'divisions' and 'separations' in history, both in the sense of time and space. In spite of over-150 years of foreign rule, not for nothing, an overwhelming number of Indian Muslims seem to express their ardent desire for freedom through the establishment of a state which would give them opportunity of an unfettered development, unhindered by Hindu or alien interest. In the past, they have suffered at the hands of both. This has been their positive experience.

What exactly would be the boundaries of such a state and whether they would be the result of statesmanship and compromise or some form of internecine struggle it is difficult to say. But in the event of the achievement of Pakistan in the Muslim majority areas, what would the picture be like from the point of view of geography and economic resources? That is the question! This book is a contribution to that problem. The geographic personality of the probable Pakistan

areas and their resources have been visualised in relation to the needs of a modern progressive state. To the author's mind that is the kind of Pakistan which alone will justify its existence. A geographer has written this book, because he believes that : 'geography offers a logic for history and a guide for the future.'

Indebtedness to many books, articles and views has to be acknowledged. A large number of sources utilized for collecting the necessary material have been mentioned in the bibliography at the end. Thanks are specially due to Dr. I. H. Zuberi, Principal, Islamia College Calcutta, for his help in more than one way in the preparation of the book. Professor F. J. C. Pereira, Head of the Department of English at the same College, kindly read the manuscript and offered many useful suggestions. Two friends of mine, Professor Hiren Mukerji and Dr. Nirod Mukerji have given valuable advice with regard to the publication of the book and other connected matters. My thanks are also due to Major R. McConnel, Architect to the Government of Bengal, for designing the jacket. Messrs. Ruhul Qudus and Mujibur Rahman two of my former pupils, have helped in the making of the index and the collection of statistics, and Abdul Karim and Mofizul Rahman have assisted me in the preparation of maps and diagrams.

I must also thank Thacker Spink & Co., for undertaking the publication of the book in spite of numerous post-war handicaps. The advice and co-operation of Mr. R. S. Carter of the same firm is gratefully acknowledged.

I am deeply grateful to the Hon'ble Mr. H. S. Suhrawardy for finding time in the midst of his multifarious and onerous responsibilities to write the *Foreword*.

Finally, I must express gratitude to my wife, but for whose encouragement and above all, forbearance, the writing of the book would not have been possible.

NAFIS AHMAD

Islamia College, Calcutta.

15th March, 1947.

INTRODUCTION

This book has been written by a geographer who believes that applied geography helps to understand a nation's problems and potentialities and suggests a sound programme of internal development and line of international co-operation which lead to prosperity and peace.

Today India is on the threshold of epoch making changes in her destiny and is on the road to political emancipation. But a host of problems have arisen with the approach of the dawn of freedom, which demand our attention for a rightful solution. The multi-national character of our country is clearer today than ever before. It is in this light that the Muslim demand for Pakistan must be viewed. It is no good non-Muslims saying nonchalantly that Pakistan is so much abracadabra, that it is a mere Jinnah fad which the Muslim communalists have avidly lapped up, that British machinations are behind it and that it is a spoke in the wheel of India's freedom movement. Facts must be faced. Pakistan is a lot more than a mere move on India's political chessboard. It has touched something very deep in Muslim hearts; therefore, no patriot worth his salt can brush it aside. The author, as a Muslim, knows very well where the shoe pinches and where the heart thumps excitedly. He would appeal to all non-Muslim patriots not to dismiss Pakistan as an artificial agitation. It is necessary to understand it. The Indian Muslims demand their rightful place in a future free India—masters of their own destiny.

The idea of Pakistan has therefore, fired their imagination with the hope of a free, happier and fuller life.

However, the purpose of this book is not to discuss the genesis of Pakistan. It is not proposed to tread the ground of day-to-day controversial politics. Besides, a treatise on Pakistan is what the author has in mind for the future. This work is primarily an answer to those who try to prove that geographically and economically the Pakistan demand is fantastic. The geographic evidence amply demonstrates that these lands will be no mere backward agricultural regions, as is customarily declared by some prejudiced politicians, who assert that such resultant fragments of India constituting themselves into separate sovereign states (Pakistan) would be so small in area, so poor in population, so lacking in resources, that there would be no hope for them of intensive industrialisation and consequent betterment in the standard of living of their people'.* Firstly, Pakistan lands would be by no means small; they would, in fact, cover a larger area than many a European country. Secondly, provided the gifts of nature are harnessed fully for the people's well-being instead of the selfish gains of a few, tremendous new possibilities lie ahead. For, it is well to realize that soil or iron ore, coal, oil or water power, are not resources unless used. Materials of economic value are passive elements in history unless pressed into man's service—by men of vision and foresight.

True Muslim patriots desire Pakistan in the context of peace and goodwill and amiable relations between it and other parts of India, and sharing the full-

*K. T. Shah : Why Pakistan and Why Not? p. 280.

est benefit of international trade and commerce. In the minds of many nationalists, our prolonged backwardness and consequent inability to supply the goods needed, has instilled dreams of a future self-sufficiency. Indeed, no country however rich is self-sufficient. The U. S. A. has diversified resources and the biggest share of some of the most essential commodities, yet she is the second greatest importing country in the world. Material progress is most desirable for all nations, but complete self-sufficiency is advantageous only for a war programme. Thus the establishment of Pakistan need not close the door to a large flow of international commerce to those parts of the Indian sub-continent which would form part of that state.

In presenting a picture of Pakistan's resources, the author has been faced with the difficulty of the absence of agreed boundary lines. There can be definiteness on this point, only in the event of the establishment of Pakistan. But for an estimate of resources and economic data employed, the Muslim majority regions both in the north-west and north-east have been taken as a basis. The Indian States with their territories have been kept out of consideration and likewise large slices of land in the eastern Punjab and in Western Bengal have been excluded, irrespective of the Muslim League's claim for the 'six provinces' as at present constituted. Of course, it is fully realized that the participation of the adjoining Indian States in a federation of the Pakistan lands and the preservation of the unity of the Bengali speaking peoples inside the new state would immensely enhance its material resources and economic stability.

Lastly, it may be added, that the sooner it is realised that the Pakistan idea is no counter move to Indian freedom but a demand behind which there is so much which is just, the easier it will be to smooth out the path of emancipation.

Chapter 1

History Retold

The importance of India's contribution to the successful prosecution of World War II has aroused world-wide interest in her political aspirations and future status. In Britain as well as the U. S. A. it is widely recognised that at no distant date India will inevitably gain economic and political independence. Men who believe in the principles of justice and freedom and the fundamentals underlying the Atlantic Charter, those millions who helped to rid the world of fascist tyranny, no longer wish to see a dependent India. No wonder then, that an increasingly large number of people all over the world wish to acquaint themselves of the existing conditions in this country. It is but proper, that this rightful interest should be based upon a many-sided information about the dynamic nature of the Indian situation. A mere acceptance of time-worn political and economic conceptions as applied to the problems of India may lead to much misunderstanding.

The most significant fact of the Indian situation to-day is the variance in the Hindu and Muslim conceptions of the state structure of the future. Hindu-Muslim differences in general, canalising into the Congress-League tussle in particular, have undoubtedly become the crux of the Indian problem. No useful

purpose is served by dismissing these differences as mere communal wranglings which will disappear with the ushering in of a common economic and political programme, the moment foreign control is withdrawn. Unfortunately, the internal differences are not as simple as that. They are bewildering to the foreign sympathisers and to superficial Indian observers as well.

An overwhelming proportion of Indian Muslims¹ under the leadership of their main political organisation the Muslim League demand the establishment of Pakistan² (partition) on the basis of the right of self determination for the 'Muslim Nation' ;—while the Hindus, whether inside the Mahasabha or the Indian National Congress, conceive of a United India, in which the Muslims would form an important minority receiving a fair and just treatment.

Therefore, for a proper comprehension of our freedom movement and its turns and twists, it is essential to understand the entire development of our modern life in this multi-people country. Then alone solutions can be found to settle the just claims of the various sections of the Indian people in the broader context of a common freedom. This work is an inquiry, above

¹ At the last elections to the Central Legislature the League secured all the Muslim seats and in the provincial elections which followed they emerged with overwhelming successes, in some cases obtaining over 94% of Muslim seats *e.g.* in Bengal.

² Pakistan has come to be the name of the future independent Muslim States to be established in the North-West Frontier Province, the Punjab, Sind and Baluchistan and in North-East India (Bengal and Assam), where Muslims form the majority of the population.

all, into some of the geographical aspects of the Pakistan demand. But a brief outline of the main historico-political facts is also provided for a proper comprehension of the problems raised in this survey.

India is inhabited by nearly 400,000,000 people¹, one-fifth of the entire human race and about three times the number in the United States of America, twice that of the Soviet Union and eight times that of Britain. Here also live about 100,000,000 Muslims, one-fourth of their total number in the world. Of these, nearly 80,000,000 are in the North-Western and North-Eastern parts of the country, where they form the majority of the population.

Western sympathisers with the cause of Indian freedom have long been accustomed to hear of a geographically 'United India', struggling to create either a Unitary or Federal form of government, with an undivided sovereignty. But such a view does not correspond to the realities of the Indian political situation to day. The Hindu-Muslim problem is characterised by its singular uniqueness, and cannot be compared to conditions elsewhere in the world. The historico-political forces have led to the evolution of different cultural and socio-economic conditions, which in spite of some common ground here and there, largely determine the variance in outlook. Viewed in this light, a competent foreign observer recognises that : "No one who is familiar with the present conditions in India can honestly question the strength of the hold

¹ According to the 1941 Census India had 388,997,995 people and out of this total the number of Muslims was 94,000,000. The population of U. S. A. was reckoned as 139,682,000 on July 1, 1945.

which the idea of 'Partition' has obtained on the minds of the Indian Muslims. It is the cardinal fact of the Indian politics to-day and no discussion of the Indian problem can be fruitful which does not recognise it and seek to comprehend the reasons for it."¹ The Muslim League which claims to represent the overwhelming mass of Muslims of India passed a resolution in March, 1940 at its Lahore session which reads.²

"Resolved that it is the considered view of this session of the All-India Muslim League that no constitutional plan would be workable in this country or acceptable to the Muslims unless it is designed on the following basic principle, viz., that geographically contiguous units are demarcated into regions which should be constituted with such territorial adjustments as may be necessary. That the areas in which the Muslims are numerically in a majority as in the North Western and North Eastern Zones of India should be grouped to constitute Independent States in which the constituent units shall be autonomous and sovereign."

The Council of the All-India Muslim League in its session of June 3, 1946 while accepting the Cabinet Mission's proposals both for an Interim Government and long-term constitutional changes re-affirmed its determination to struggle for the establishment of Pakistan. On the eve of the meeting Mr. Jinnah declared : "Let me tell you that Muslim India will not

¹ R. Coupland: The Constitutional Problem in India, Pt. III, p. 75, (1944).

² An Explanation of the Lahore Resolution of the All-India Muslim League, by a Mussalman, Published by Bombay Provincial Muslim League, pp. 1—2.

rest content until we have established full, complete and sovereign Pakistan."

Thus it is clear that such a vision of India's political future no longer remains a subject of mere academic debate. It is an ideal which, based upon the principle of self-determination and freedom, has gripped the mind of millions of Indian Muslims. On this score it may be worth while to examine its geographical implications. But before the problem is viewed from the angle of political, economic and human geography, it is necessary to set forth briefly the historical background, in order to provide a perspective against which it is desirable to appreciate the main aspects in India's political development.¹

¹ It is not intended here to discuss this aspect exhaustively. In recent years much literature has appeared for and against Pakistan with emphasis on political matters. See Bibliography.

In ancient times, except for two short periods under the Mauryar (C. 250 B. C.) with their capital at Pataliputra (near the modern Patna, in Bihar) and the Guptas (C. 400 A. D.) ruling from Ujjain, the whole of India was never under one government. In the 3rd century B. C. the Empire of Asoka extended from Peshawar to the heart of Mysore and from Gujerat to Bengal. Then came about the short interlude of Gupta hegemony, embracing all northern India and even earning homage from some southern kings. During the later times of Harsha Vardhana (606-647 A. D.) only northern and North-Western India had the benefit of a unified control. Otherwise, India from north to south was always cut up politically into the territories of a medley of rajas and rulers. There were only occasional periods when an 'United India' of some sort came into being under a few outstanding Muslim monarchs. Though the Hindu religion and its precepts were widely accepted yet there was no political unity on that score. When the Muslim advance commenced the Indian rulers did not present any united opposition. They were more concerned with the preservation of their own territories, which neatly sliced off India into various parts. During the Mughal times only twice, in Akbar's and Aurangzeb's reigns, most of the Indian sub-continent formed part of that Empire. In fact, it was only the complete establishment of the British power and the

development of transport and communications which led to the growth of the concept of a 'United India'.

For the convenience of such a preliminary study the period under review has been divided into seven stages. The dates have been chosen more or less arbitrarily to demarcate one phase from the other. The facts have been presented in the barest outline. The developments during the last 150 years may therefore, be summarised as follows :—

(1) By the beginning of the 19th century the British traders and merchants under the guidance of the East India Company had already established themselves as rulers over large parts of India. The fruits of the Industrial Revolution were being reaped in England in the shape of large-scale production. The structure of the trade between India and the west was changed, converting the former country into a market for the machine-manufactured goods of the latter. In India, the old self-sufficient village economy was shattered and the network of new rail communications was being laid down from the presidency towns. Politically, power was largely wrested from Muslim hands and as a consequence, Muslim society was most severely hit both politically and economically. It was in these circumstances that the politico-religious Wahabi movement took its birth and remained an active factor in India's political struggle against foreign domination upto the third quarter of the last century. In our own times we are apt to forget the historical significance of this militant-nationalist movement. Its growth and development under Syed Ahmad (1820-31) of Rai Bareilly, (U. P.) though obscurantist and fanatical, appealed for

the simplicity and purity of religion and the equality of men, and in general, the movement was vehemently anti-British.

Though the movement started from Arabia as a puritan upsurge, it developed its anti-imperialist character in those foreign dominated lands into which it spread. Thus, it has been aptly described as Anabaptist in faith and Red republican in politics.¹ In India it had the widespread support of the Muslim poor and middle class from the north-western passes to the plains of Bengal, where the down-trodden peasantry obtained agitational inspiration from it. The inhuman treatment of the peasants by indigo planters in the era before the advent of synthetic dyes was responsible for a widespread agitation among the Bengal peasantry. The Wahabis organised the Muslim peasants into a 'Wahabi Rafiq Mandal' in Northern Bengal to fight the oppressors to the bitter end. The Wahabis supplied the first political convicts for transportation and were also the first terrorists.² On the whole, they used a religious ideology to enthuse and invigorate the people and this was natural enough in a pre-industrialist society. Indeed, Indian Islam in the 19th century had proclaimed a sort of war against Britain. They fought gallantly against the foreigner but were defeated. In the words of a sympathetic historian : "In the history of India's national movement, the spectacle of Muslims in those early days courageously trying to break the British fetters needs to be gratefully recorded."

This was also the time when under the leadership

¹ Amit Sen : Notes on the Bengal Renaissance, Op. Cit., p. 41.

² Ibid., p. 41.

of men like Raja Ram Mohan Rai, the Hindu middle class was taking up an attitude of co-operation with the new rulers and adopting a 'modern outlook.' The birth of the Brahmo Samaj movement was a direct consequence of this attitude. But the political awakening among the upper and the newly risen middle class Hindus, essentially patterned on the liberal lines of Victorian England, was closely linked with Hindu Revivalism. Its decisively Hindu garb was evident in all forms of cultural and literary activity in spite of the borrowed internationalism of the Brahmo enthusiasts. "Patriotic writers invariably glorified not merely the ancient Indian culture with its predominantly Hindu structure, they also began to dwell upon the struggles of the Rajputs, the Marathas, the Sikhs, as instances of the freedom urge. As it happened, all these peoples had as their adversaries—the Muslims; and the Hindu trend in the national sentiment was intensified with not a very happy consequence."¹

But the Indian Muslims were in a different position. On the one hand they felt keen resentment against the British for ousting them from power; and on the other, they did not relish the idea of growing Hindu leadership. As an English official observed at that time, "The Mussalmans of India are, and have been for many years, a source of chronic danger to the British power in India. For some reason or other they have held aloof from our system, and the changes in which the more flexible Hindus have cheerfully acquiesced

¹ Amit Sen : Notes on the Bengal Renaissance, p. 40. Also see Hiren Mukerjee : India struggles for freedom, pp. 45—46 (an important contribution to the understanding of the Indian political problem).

are regarded by them as deep personal wrongs.”¹ Further, the revolutionary and the anti-British content of their attitude, as compared with contemporary Hindu reformism, is well brought out by the remarks² of the British Judge (Sir Herbert Edwards), who passed judgment in the famous Wahabi Trial at Ambala in 1864. Speaking of one of the chief accused Yahya Ali, he said, “He aspires to the merit of a religious reformer; but instead of appealing to reason and conscience, like his fellow Hindu countrymen in Bengal, of the Brahmo Samaj, he seeks his end in political revolution, and madly plots against the government, which probably saved the Muhammadans of India from extinction and certainly brought in religious freedom.” The last part of the sentence is truly characteristic of the British sense of self righteousness!

(2) Throughout the first three quarters of the 19th century the British policy in India was characterised by its strong anti-Muslim attitude all over the country. The ferment of 1857 was widespread, and a certain degree of collaboration by all the Indian communities was witnessed. But after the suppression of the uprising, the Muslims were subjected to a specially harsh treatment because their participation was taken as a calculated move to restore Muslim rule. The heart-rending story of this deliberate policy of extermination is a part of history and cannot be denied. The consequences were obvious. The Muslims were in a sullen mood and were able neither to benefit from the newly introduced western education, nor to enter bureaucratic machinery, nor to take up trade and busi-

¹ Hunter: The Indian Mussalmans, p. 3.

² Ibid., p. 85.

ness. For example, interesting light on the deliberate anti-Muslim policy of the Bengal government, followed throughout this period, is thrown by a high placed European officer, who wrote in 1871, and said that in a part of India where formerly the Muslims enjoyed the privileges of wealth and power, in the writer's time they were reduced to dire circumstances.¹ The official, it should be remembered, did not write in genuine sympathy with the oppressed Muslims, but in defence of the perpetuation of British political power and the maintenance of a Christian government. To him, the Hindu was pliable and sly, while the Mussalman was an uncompromising fanatic who merely needed appeasement. Thus may be explained the cultural, social and economic effacement of the Muslim middle and well-to-do classes, which provided the opportunity to the rising Hindu bourgeoisie, who in the course of time grew loath to share with the Muslims either the fruits of officialdom or of prosperity. In this manner were erected some of the most insurmountable barriers of estrangement between the two communities.

(3) Towards the eighties of the last century Sir Syed Ahmed Khan an ex-official of the government started his well-known 'Aligarh Movement,' by asking his community to take to western education and adopt a less hostile attitude to the British and fight for their rights constitutionally. Many believe that, in the circumstances, this was the only way out, to check the complete ruin of the Muslims. The result of his efforts was the establishment of the M. A. O. College, which later developed into the famous Muslim University at

¹ Hunter: *The Indian Mussalmans*, pp. 156—70.

Aligarh, and the birth of the Muhammedan Educational Conference, which also provided the Muslim educated middle class with a platform for a liberal political activity.

Allan Octavian Hume, a Scottish Civilian, who was a well-wisher of India, got in touch with moderate Indian leaders and assembled them in a session at Bombay in December 1885, thereby bringing into being the National Congress. This move was approved by the then Viceroy Lord Dufferin who looked with favour at the idea of a possible birth of 'His Majesty's Opposition' to British rule in India. This aspect apart, the National Congress was in fact founded on the crest of a general Hindu Revival and with the co-operation and support of their well-to-do and middle class. Barring a few individuals the Muslims generally kept away from it.

Sir Syed Ahmad Khan was not in favour of the Muslim support to the National Congress and fully explained the reasons of his opposition to it in his "Asbab-i-Baghawat-i-Hind" (The Causes of Indian Mutiny, 1859).

But his influence, in general, was by no means directed to make the Mussalmans into toadies, as is sometimes wrongly stated.¹ He was a patriot who shared with similarly placed non-Muslims, enlightened ideas with regard to ugly racial discrimination; and he keenly felt the national humiliation. His writings of the post-Mutiny period reflect such feelings. But Sir Syed clearly understood the handicap of a time-

¹ C. Smith: *Modern Islam in India*, pp. 10—24.

lag in the awakening of Muslims, resulting in the uneven development of the two communities. Men who shared his views felt that in the event of political emancipation, if adequate safe-guards were not forthcoming, the Muslims would be swamped by the more advanced Hindus. In fact, the Muslim slogans of the time expressed the self-interest of those sections of the middle classes which were backward—they happened to be Muslims. The Hindu nationalists missed this point (as they do even now) and condemned all Muslim demands for protection as communal and reactionary.

(4) The early years of the present century were stormy the world over, and simultaneously with the epoch making Japanese victory over Tsarist Russia and the risings of the Leningrad workers, in India the famous Swadeshi movement took its birth and swept the country from Maharashtra to north India. Even at Aligarh, a Swadeshi shop was opened and the Muslim students staged a strike against the English Principal.

These events followed in the wake of the declaration of the Partition of Bengal on July 20, 1905. The awakened Hindu middle class in Bengal launched a vehement agitation against this so-called administrative measure, which would have really struck a mortal blow to their lead in that part of India. The fire of national anger threw up the Swadeshi movement and also helped to light the torch of terrorism. Consequently governmental repression followed in Bengal. But the common ground in the Swadeshi movement among the Hindus and Muslims was indicative of the disapproval of foreign rule. The Hindus complain of

lukewarm Muslims support to the movement but as a pertinent answer¹ it has, indeed, been rightly pointed out: 'Detractors of Indian nationalism have made much of the fact that Muslims largely held aloof from the Swadeshi movement and concomitant activities. There can be no denying that ideologically, the movement was Hindu, often effusively so. If it was hoped that Muslims could be drawn in by celebrations like the Shivaji festival, or demonstrative ablution in the Ganges, or the worship of Ganesh and Bhawani, the ceremony of Virastami and taking terrorist vows before Kali's image, then, surely, it was a vain hope.' It has been rightly remarked² by Professor Mukherjee that for some twenty years, the Congress in its resolutions made no basic national claim, but only the demand for a greater degree of Indian representation within the ambit of British rule. In 1895 an English newspaper is reported to have tauntingly remarked that in Bengal women had idolised the Congress and made it a part of the Hindu pantheon.

At the Dacca Session of the Muslim Educational Conference held in December 1906 approval was accorded to the idea of Bengal's partition. The Muslim League was also born here and the step taken was strongly supported by the later Nationalist Muslims e.g. Hakim Ajmal Khan, Syed Ali Imam and Maulana Muhammad Ali. On October 1, 1906 a Muslim deputation, led by the Agha Khan waited upon the Viceroy Lord Minto at Simla, and demanded the safeguard of a separate electorate for the Muslims in the proposed constitutional reforms.

¹ Hiren Mukherjee: *India Struggles for Freedom*, p. 96

² *Ibid.*, pp. 71—72.

Some years afterwards, the Indian Muslims were greatly agitated by the advance of European imperialism against the Muslims in the west (i.e. Tripoli, Balkan Wars etc.) and the Pan-Islam idea was indeed largely based upon resistance to the western domination of the Islamic lands.

To the mind of the ordinary Muslim Britain was following a dubious policy in the Middle East, and her opposition to Turkey was taken as the destruction of the biggest Muslim power and the danger to the holy lands of Islam. Eventually, in World War I Britain and Turkey were found in opposite camps and the Indian Muslims' resentment against Britain increased. Maulana Muhammad Ali started the famous weekly, 'Comrade', from Calcutta, and greatly helped to rouse Muslim consciousness with his powerful pen. Dr. Ansari with a band of young patriots, led the Medical Mission to the relief of Turkey in 1912.

These developments led to a pact between the Congress and the Muslim League in 1916, known as the Lucknow Pact. Thereafter, a short period of unity followed, to remain unbroken through the stormy period of World War I. In the meantime, a large number of Indian Muslims had migrated out of India and formed with some Hindu emigres an 'Indian Government' at Kabul in 1917. This 'provisional government' had a specifically Muslim trend and it is believed that the beginnings of the Pakistan demand can be traced to the differences between Raja Mahindra Pratab (later for many years resident in Japan, till his arrest in Tokyo after the Allied occupation in 1945) and the late Maulana Obaidullah Sindhi, over the latter's

demand for Muslim control over their majority areas. Later, at Constantinople in 1926, the Maulana, actually developed this idea of 'partition' as a part of his Indian Constitution called 'Sarvarajya.' In many other respects the scheme reads almost like a socialist document, its main features being self-determination of national units, India to be a willing union of sovereign national republics, abolition of landlordism and nationalisation of key industries.

(5) The close of World War I saw the Indian Muslims greatly agitated on the question of British treatment of a defeated Turkey and the extinction of the Khilafat. Moreover, all Indians felt that British promises of independence after the war were not being fulfilled. Indeed, repression had followed it in many instances. Mr. Gandhi took up the leadership and conceived of his scheme of a non-cooperation movement. This simultaneous upsurge brought the Hindus and Muslims together, as never before or since in a common struggle against the British rule in India.

Unfortunately, in the heat of the present Hindu-Muslim antagonism many significant phases of the Muslim's part in India's political struggle at this period are passed over. For example, the Khilafat leaders were the first to demand that Swaraj be defined as complete independence. It was at Ahmadabad in 1921 that Maulana Hasrat Mohani made this demand, but Mr. Gandhi opposed it, calling such ideas 'lack of responsibility'! The Muslim League at the Amritsar session passed a resolution in 1919 calling on the Indian

Muslims not to join the Indian Army.¹ It was only much later—at its Madras session in 1927,—that the Congress accepted the goal of complete independence under great pressure from the younger radical elements. But the very next year ‘complete independence’ was changed to ‘Dominion Status’. It is instructive to note that in spite of their small numbers and weak economic condition, the Muslims collected one crore of rupees for the Khilafat movement—as much as was collected for the Tilak Swaraj Fund.²

It is generally accepted by the numerous friends and sympathisers, in India and abroad, of Hindu ‘nationalists’ that from its very inception the Congress represented the militant voice of Indian nationalism. Since its physiognomy was over-whelmingly Hindu therefore that community’s anti-British role has been over emphasised. In 1885, presiding over the Bombay session, W. C. Bonnerje, the Congress president, declared, ‘all that they desired was that the basis of the government should be widened and that the people should have their proper and legitimate share in it.’ Of course, thorough loyalty to the British government was most emphatically stressed. But earlier it had been clearly laid down that ‘unswerving loyalty to the British Crown shall be the keynote of the institution’. It is in this light that the attitude of the opposite numbers in the Muslim aristocracy and middle class must be judged.

When Mr. Gandhi suddenly called off the non-co-operation movement in February 1922 all his

¹ Joshi: For the Final Bid for Power, p. 28.

² Ibid., p. 29.

Khilafat compatriots protested against such a policy and wished to continue the struggle with an additional 10 million volunteers. It would not be unfair to remark, that it was Mr. Gandhi and the Congress leadership which curbed this militant patriotism, not the Muslim unwillingness to continue the struggle. The Congress party decided to work the 1919 Act and at the same time Hindu reactionaries started anti-Muslim movements like 'Shuddhi' and 'Sanghatan'. The Muslims replied with 'Tanzim' and 'Tabligh'. Communal riots broke out everywhere and a splendid phase of joint action came to an unhappy end. Though in the heart of many a Hindu and Muslim leader there was the desire for agreement, yet all efforts towards the consummation of a national pact broke down. Such a story of sad 'failures' extends from the unsuccessful All Parties Convention in December 1928 at Calcutta to the 1930 Civil Disobedience Movement (without prior agreement with Muslims), the haggings at the London Round Table Conferences, and the Allahabad Unity Conference in 1932. The basis of discord remained constant. The Hindus wanted a Unitary India with democratic majority rule and dubbed every Muslim wish for safeguards as so much communalism and separatism. The Muslims on their part would not trust the Hindu promises without an agreed solution.

The truth of the matter is that the period after the close of World War I was one of great opportunity for the national bourgeoisie and the growth of vested interests. But the development of the Hindu and consolidation of the position of the former. The schism Muslim bourgeoisie was unequal because of the earlier

between them became wider. At this period also ended the loyalist and liberal leadership of the national movement.

(6) With the advent of the New Constitution in 1935 and with it the prospects of power in Indian hands, differences grew. The Indian national movement had earlier grown up among the educated Hindu middle-class, and therefore bore the stamp of Hindu ideology. Thus "the idea that India is one nation became inextricably interwoven with ideas depicting the oneness of India in Hindu religious and cultural imagery."¹ With the actual working of the Congress governments in the provinces and the refusal to form coalition ministries with other political parties especially the Muslim League, the discord grew deeper. In 1936, was witnessed a new orientation in the policy of the Muslim League. It backed a clear headed constitutionalist movement, and the aim to combine it with growing mass influence took shape.

This was also the period when a sense of nationalities became widespread, culminating in the Muslim demand of Pakistan on the basis of self-determination; —though, in various forms, the idea had earlier been put forth by the poet Iqbal (1930), and by Rahmat Ali at Cambridge.² It had even been suggested by a front rank Hindu and Congress leader Lala Lajpat Rai. He approached the problem from a practical point of view and was not concerned with the recognition of rights and justice. He had two alternatives as a solution—

¹ Pakistan and National Unity (Communist Solution), p. 20.

² See The Founder of Pakistan by Khan A. Ahmad.

either the Muslims should give up their role as a separate entity, or India should be divided into Hindu and Muslim States.¹ But the idea of the establishment of Pakistan really caught the imagination of the Muslims after the Lahore Resolution of the League. Then came the calamity of World War II; and Hindu Muslim differences persisted unabated.

(7) Finally, at the Simla Conference convened by Lord Wavell in June, 1945 the Congress did not concede parity to the Muslim League; and later at the September 1945 session of the A.-I.C.C. at Bombay they refused to come to terms with that body. As a result of this, many prominent Muslim leaders left the Congress. It was in this atmosphere that the central and provincial elections were fought. The Muslim League won overwhelming electoral victories both at the centre and in the provinces and reiterated its Pakistan demand. The Congress which won practically all the Hindu seats in the election continued to ridicule the idea of the 'division' of India into Hindustan and Pakistan. But there were indications that a thoughtful consideration was being given to this cardinal Muslim demand by many Britishers. As an experienced English journalist recently observed,² "The demand for Pakistan is now a stern reality; those who imagine, it will blow over without the necessity of some compromise, delude themselves." And he added that the Pakistan demand should be considered in the light of the world-wide problem of a nationalist majority opposed by a large

¹ Saliyd: Muhammad Ali Jinnah, pp. 331—333.

² Mr. Arthur Moore (Ex-Editor of the "Statesman") writing on "The Atomic Age," The Calcutta "Statesman," on 27-2-46.

and militant minority, profoundly attached to a different culture and different religious and social usages.

It was in this atmosphere that the Cabinet Mission arrived in India in the last week of March 1946. Prolonged parleys and conferences with the Congress and Muslim League leaders and other parties went on in Delhi and Simla for about two months. In the absence of any mutual agreement among the two main Indian parties, the Mission announced its award on May 16, 1946, its main features for the long-term plan being the formation of three Groups of Indian provinces, a Constituent Assembly, and the emergence of a Centre controlling Foreign Affairs, Defence and Communications. The award naturally did not fully satisfy any party. The Congress was pleased to note the rejection of a sovereign Pakistan, but did not approve of a compulsory grouping of provinces. The Muslim League refused to accept the rejection of Pakistan, but in the grouping scheme detected the germ of Pakistan. Further, the Muslim League agreed to participate in the proposed Interim Government, while the Congress turned it down. The Viceroy formed an officials' caretaker government, and both the parties proceeded with elections to the Constituent Assembly. The Congress held its A.-I.C.C. meeting at Bombay in the first week of July 1946. The decision of the Working Committee to accept the long-term proposals was endorsed by a 204 to 50 majority.

Chapter II

Muslims and the National Question

It is desirable to apply the principles of political geography to specific world problems rather than keep them a matter of mere academic argument. Such knowledge should be harnessed to the establishment of international justice and human principles. The detached view of social scientists is no longer tenable: we have to deal with human problems in all their variety, and the geographer has to come out of his 'Ivory Tower' to benefit people from his balanced and scientific findings. One of the main tasks of the political geographer is to study the geographic aspects of the realities of state relationships. Can this knowledge be applied to the understanding of the Indian political problem?

Race and Nationality.

The Indian Muslims call themselves a nation. How much substance is there in this claim from the point of view of the community of race, language, territory, economic life, religion and peculiarities of psychological make-up? Before we enter into this investigation we may take note of the observation of one of the great

world leaders¹ of our times, when he says that a nation is not something eternal which has existed from time immemorial, but is a product of a definite epoch—the epoch of capitalism. Also that a nation is not a racial or tribal, but a historically constituted community of people.² Nationality is indeed a group consciousness of a body of people and relates to a condition of the mind, feelings and mode of life.

It is true that conversion, at various periods, has brought numbers of Hindus within the Muslim fold. It is obvious, therefore, that many Indian Muslims belong to the same social strains as the Hindus. But—and this is the point at issue—can it be rightly argued that since the Indian Muslims belong to the same social strains as the Hindus, they are therefore to be denied a separate nationhood? Facts can be marshalled to show, first, that similarity or identity of race is a totally inadequate basis on which to establish a unified state; and secondly and conversely that diversity of racial elements is no barrier to the formation of a unified state. Spanish history, for instance, brings us face to face with the fact that Muslims and Christians in the Iberian peninsula, though springing from one and the same Spanish race, could not find it possible to achieve peace, amity and stability. The Christian Spaniard mercilessly persecuted the Muslim Spaniards—men of their own race—during and after the period of the Reconquest. An end might have been put to this persecution by the simple expedient of establishing

¹ J. Stalin: *Marxism and the Question of Nationalities*, p. 1.

² *Ibid.*, p. 7.

two separate states, whose basic difference would certainly not have been racial.—On the other hand, Americans who are a conglomeration of highly diverse racial types, constitute a definitely unified political entity: the U.S.A. To argue, therefore, that the Indian Muslims demand for a separate state must be rejected because they belong to the same racial strains as the Hindus, is not merely to argue absurdly—it is to blind oneself to the unalterable lesson history teaches.

Here, two interesting instances of 'separation,' from the modern history of Europe may be pointed out. In spite of several centuries of incorporation into a single kingdom the peoples of the Low Countries of N.-W. Europe (now Holland and Belgium) were not a happy family due to a variety of differences in culture, religion and outlook. The Dutch were bigoted Calvinists, the Belgians were equally devoted to Roman Catholicism (off-shoots of the same religion—Christianity). The northern provinces were essentially Teutonic, the southern were inclined to the civilization and language of the Romance lands that lay nearer them. Holland was a trading and Belgium a manufacturing country. After the success of the Belgian separatist moves in 1831, the dominant Holland was still adamant and wanted 'unity,' but the final *coup de grace* was given by England, by blockading the coast of Holland and making separation final by the threat of force!¹

The other scene is laid in Scandinavia. The second half of the 19th century was a period of great intellectual activity in Norway. She made a name in poetry,

¹ See R. Lodge: *History of Modern Europe*, pp. 663—66.

drama and music and there was also a linguistic movement, all synchronising with a nationalistic urge. The Norwegian people began to resent the preponderance of Swedes in state management as well as trade and commerce. The feeling manifested itself in a bitter constitutional struggle and culminated in the breakup of the Union in 1905. Thus ended a long political association under the same crown with many racial, linguistic and cultural affinities.¹ Supporters of a united Scandinavia saw the danger of the creation of two weak states instead of one; but the Norwegians viewed things differently. Though their country was small and economically less developed than Sweden, they visualised for her a future of development in the context of independence. The measure of progress achieved by Norway was later admired by the whole western world.

Language.

It is recognised from experience both in the past and the present, that language is one of the most obvious and tangible of the conditions of likemindedness in the making of a fully developed nationality. But in India inspite of espousing the cause of national languages by Muslims i.e. Sindhi, Pashto, Punjabi and Bengali etc. in their respective homelands, there is a strong desire among all educated classes to take up Urdu (a simplified form of which is sometimes called Hindustani) as their common *lingua franca*. It is the case of a people who have a desire to form a common nationality in spite of difference of language. But this does not

¹ See Camb. Modern History, Vol. XII, pp. 273—80

mean that there may not be two nations speaking the same language. Englishmen and Americans speak a common language but do not constitute one nation. The same is true of the Norwegians and the Danes and the English and Irish.

Environment.

The element of environment with its physical and cultural associations plays an indispensable role in the formation of a nationality. It provides the sheet-anchor and gives it concreteness. The character of a nationality is greatly moulded by the physical environment of its homeland with which are also associated countless cherished memories. That is why it is not surprising that the Muslim nationalities, for their full and unfettered development and self-expression, demand a national home—geographically those areas where they have lived for centuries. In addition, by virtue of occupying areas in the North-West and North-East, with distinct geographic personalities, yet having the stamp of an internal economic bond, of an agricultural economy and little large scale industry—they have a community of economic life, which gives them a common outlook. As a result of the economic developments of the last 100 years, the earlier development of the Hindu middle-class as against a much larger proportion of Muslim masses, (both peasant and proletariat) cannot be ignored. In general, the Muslims have much less of both education and wealth, and are therefore determined to secure not only effective protection but also an opportunity for unfettered development, by creating an independent sovereign state. Thus the

essence of the Pakistan demand has a truly secular and economic basis. There is indeed no communalism about it and no religious mediaevalism.

Religion.

Religion was a corner stone in the earliest development of nationality. But ever since the religious wars ended in Europe and there commenced a period of commercialism and mercantilism, followed by material development based on capitalism and imperial exploitation; religion ceased to play a part as a determining factor of nationality. But in the eastern countries in general, and particularly in India, religion has historically come to be identified with the total outlook (Weltanschauung) of large communities. And in the period of unequal bourgeois development among the Hindus and Muslims religion has come to have a deep economic and social meaning. But this reality is constantly ignored by numerous Indian nationalists, fired by the unalloyed 19th century ideals of nationalism: such persons consider a religious basis of nationality as monstrous and mediaeval. To foreign observers this importance of religion in relation to politics is something indefinable and they fail to appreciate its implications in Indian life in the face of common opposition to alien rule. The Hindus and Muslims have lived in India for over nine hundred years and to-day present an interwoven communal pattern in their settlements. They have many similar traits and much common ground of struggle against foreign rule. But in spite of centuries of association, Hindus and Moslems represent two distinct 'cultures';

their religious conceptions stand as a great barrier against a complete merging together. There is no inter-dining and intermarriage,¹ (circumstances unheard of in any other part of the world) and these two factors have been a bar to social assimilation. Their admired legendary heroes and historical personalities are different; in fact, those revered by one group are either hated or ridiculed by the other. The Hindus look upon the rest of humanity as unclean,—a sort of a 'touch-me-not' attitude is characteristic of a vast multitude of them. This is very annoying to the Muslim and the foreigner alike. No one who has visited India can deny that, socially and culturally, India is already sharply divided. At every railway station there are separate Hindu and Muslim restaurants, denominational tea-stalls, and even the drinking water is labelled 'Hindu' and 'Muslim'. It is a common sight to see Christians and Muslims eating food or taking drinks served by the Hindus; but a great many Hindus will not touch these things unless they have been prepared by caste Hindus. One has only to travel from Karachi to Shillong, or from Peshawar to Madras, and see these striking differences of food, dress, personal appearance, and names, to be convinced of this fundamental difference in culture² and day to day life. The awakening of race consciousness among Hindus in the course of the last half century, itself the result of Hindu revivalism we have noted, has intensified these cultural differences, and awaked in them the desire to dominate other people.³

In India religious differences are a great reality.

¹ K. S. Ahmad: *The Communal Pattern of India*, p. 2.

² Sir H. Suhrawardy: *Hindustan or Pakistan*, p. 17.

³ K. Durrani: *The Meaning of Pakistan*, pp. 80—81.

Faith is not a matter between the individual (Hindu or Muslim) and his God, as most westerners think, but a factor determining an individual's opportunities in society. Muslims look upon their religion as a way of life, and their culture and social institutions as a clear expression of their separate individuality. This gives them what may be called a 'national character'. Thus the Indian Muslim's political demand, is but a crystallization of the continued process of his thought and life, as formed by history and environment. In the same geographical surroundings, among Hindus and Muslims, habits, customs, manners, dress, diet, houses and festivals are all different. It is this difference which, in the context of present day circumstances, defines the physiognomy of the 'two nations' and gives each its particular psychological make-up. Indeed, both in the history of Europe and Asia there have been occasions when truly national demands have appeared in the garb of the so-called religious movements. It is recognised by students of history that the Protestant movement in Europe essentially arose as a great national upsurge. In India, the examples of the Sikhs and the Maharashtran's struggles for freedom may be instanced.

It cannot be denied that in the course of over a thousand years of mixing and commingling and a common background of many similarities of social life and environment, some points of sameness and unity exist between the Hindus and Muslims. Nevertheless, in the light of what has been pointed out above, the simple fact remains that India is not a homogenous nation like many European countries (England or France) but

what may be called a family of nationalities. Each nationality has its own language, culture and historical traditions etc. Many of these nationalities happen to be Muslim by faith and therefore share a 'common way of life', history and traditions with other Indian Muslims.

Many critics of Pakistan assert that these Hindu-Muslim differences exist only among the city folk and upper classes, and that therefore, the Muslim masses remain unresponsive to the call of partition. But this does not conform to reality and is at best wishful thinking. The fact is that the Muslim bourgeoisie, repressed on every hand by its opposite number, has been stirred into movement. The Muslim masses have not remained unresponsive to the appeal of Pakistan and have rallied round its banner, for the simple reason that the repression from above affects them also and has provoked discontent. This point having been reached the Muslim national movement has begun.

The purpose of the foregoing observations was not to answer the critics of the 'Pakistan Idea,' as it is primarily proposed in these pages to discuss the economic-geographical feasibility of Pakistan if established.

But, it may be stressed that the Hindu-Muslim problem in India to-day has basically become international rather than inter-communal and that no solution which is not based upon this reality will ever be permanent.

Chapter III

PAKISTAN : Boundaries, Frontiers and Defence

What would be the frame-work within which the Pakistan lands will be contained? Once the principle of self-determination for the Muslims is conceded, the fixing of these territories may not be as difficult as is generally believed. The lay out of the communal pattern in the contiguous territories in the North-West and the North-east, subject to minor details,¹ and adjustments would be a decisive factor. When the basis of a preponderant Muslim population living in contiguous territories, is applied to the present scheme of British Indian provinces, it reveals two majority areas (with over 50 per cent population) in the north-west (Baluchistan, North-Western Frontier Province, Sind and Punjab) and the north-east (Bengal and parts of Assam) as shown in maps No. 1 and 2. But the present provincial blocs should not determine the boundaries of the proposed Pakistan lands. Firstly, because the British Indian provinces were not carved out on the

¹ With regard to border zones and contemplated migrations of population decisions would depend upon the deliberations of a future joint commission. Here only the general outlines may be pointed out.

basis of any religious or racial, linguistic or geographical reasons. They mostly represent the successive stages of British acquisition. Secondly, within the Punjab and Bengal Muslims are not evenly distributed. Therefore, it is necessary to examine the communal pattern in both the east and west in greater detail.

The Muslim percentage to total population in their majority provinces is as follows :

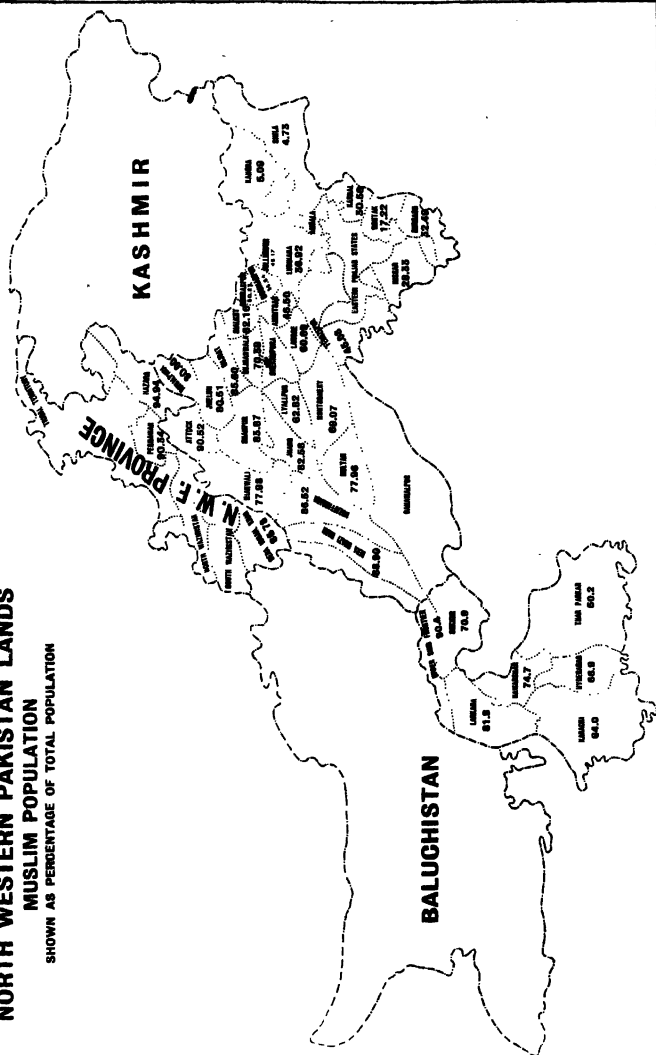
Baluchistan	...	...	87.50
N.-W.F.P.	...	...	91.79
Sind	...	...	70.75
Punjab	...	...	50.07
Bengal	...	...	54.73

*In the N.-West :—*In the Punjab on the basis of a Muslim majority of 50 per cent and over, the boundary between the Muslim and non-Muslim Punjab runs roughly, in the east, along the Panchnad (joint waters of five rivers) and the Sutlej rivers up to the Lahore district, and thereafter enclosing the bulge of the Amritsar district, joins up with the Siwaliks and the outer Himalaya east of the Gurdaspur district boundaries. Thereby, the two divisions of Jullundur and Ambala along with the eastern Punjab states fall outside the Muslim zone (see map No. 3). But this obvious demarcation has several interesting features east of the 'boundary' thus made out. In only one of the five districts of the Jullundur division (Jullundur, Ludhiana, Ferozpur, Hoshiarpur and Kangra) with the exception of Kangra, do the Muslims, Hindus or Sikhs constitute a

NORTH WESTERN PAKISTAN LANDS

MUSLIM POPULATION

SHOWN AS PERCENTAGE OF TOTAL POPULATION



majority by themselves. The triangular aspect of their communal pattern may be expressed thus :—

TABLE I

Percentage of total population

Districts	Hindus	Sikhs	Hindus & Sikhs	Muslims	Total population in lakhs
Hoshiarpur	40.00	16.92	56.92	36.64	11.7
Amritsar	15.35	36.14	51.49	46.50	14.13
Jullundur	17.57	26.44	44.01	45.17	11.27
Ludhiana	20.36	41.69	62.05	36.92	8.18
Ferozpur	19.62	33.68	53.30	45.08	14.23

Kangra district has a 93.23 per cent Hindu majority. The eastern most part of the Punjab i.e. The Ambala division is predominantly a Hindu majority area. Out of a total population of 4,695,462 Hindus number 3,099,483 and Muslims only 1,318,136. The Sikhs are a small minority of 240,000. The Eastern Punjab states occupy the tract between the two divisions of Ambala and Jullundur. It is popularly imagined that the Sikhs in their homelands in the eastern Punjab constitute a majority of population and are therefore entitled to a separate state as the Muslims. True, out of the total number of Sikhs in India (5,691,447) 3,757,401 live in the Punjab and nearly 1,400,000 in the Punjab states. In fact, outside the Muslim majority zone in the west,

only in the following districts have they a population of over 10 per cent of the total :—

Ambala	18.44	Jullundur	26.44	Ludhiana	41.69
Ferozpur	33.68	Hoshiarpur	16.92	Amritsar	36.14

Thus, the Sikh claim for a separate state cannot be based on a population basis. The question naturally arises, what are to be the eastern boundaries of the N.-W. Pakistan lands? The four districts of the Jullundur division with the exception of Kangra may have to decide by a plebiscite whether they wish to remain with Pakistan or Hindustan. This being so, by far the largest proportion of the Sikhs lands in the central and eastern Punjab will either be a part of Pakistan or Hindustan and that community would constitute an important minority in either political unit;—though, while remaining with Pakistan, the Sikhs will have the benefit of a linguistic unity and in many respects a cultural affinity.

The Sikhs by virtue of their historical role as well as position during a hundred years of British occupation deserve an important, just and fair treatment in a future free India. With the proper appreciation of the role of growing nationalities and the right of self-determination, has originated the idea of a 'Sikh homeland'. In certain quarters¹ this 'Sikh homeland' is territorially linked up with the eastern part of the Central Punjab, in which it is proposed to include the districts of Gurdaspur, Amritsar and eastern Ferozpur in the west, the northern part of Hissar in the south,

¹ Communist view (set forth in the People's Age, Bombay 16-12-45).

western Kangra in the north and parts of the Simla states, and the Ambala and Karnal districts in the east. The central core would consist of the Hoshiarpur, Jullundur and Ludhiana districts along with all the important Eastern Punjab States (Kapurthala, Patiala, Mandi, Nabha, Malerkotla, Sangrur etc.)¹ But this suggested territorial arrangement also brings out the complex inter-communal pattern with its triangular aspect as follows : This is an area of about 22,535 square miles.

	Total number	Percentage to total population
Muslims	3,933,000	34.5
Sikhs	3,640,000	33.1
Hindus	3,327,000	31.6

Thus, instead of a predominantly 'Sikh Homeland' there would emerge another autonomous unit with a free and equal partnership among the three communities.

IN THE EAST

What will be the possible boundaries of the Eastern Pakistan Lands? Under the present provincial arrangement there are a little over 33 million Muslims in Bengal with a percentage of 54.73 to the total population, and in Assam the figures of population and percentage are 3,442,479 and 33.73 respectively. But a closer examination of the communal pattern in this province also reveals a different picture of distribution. In every district of western Bengal (all the districts of the Burdwan division i.e. Birbhum, Burdwan, Bankura,

¹ See map No. 3.

Midnapore, Hooghly and Howrah plus the 24 Parganas) the Hindus constitute an overwhelming majority, and it is the same with the Jalpaiguri and Darjeeling districts in the north (see map no. 4). Only in the Khulna district in the south, is there a fifty-fifty basis of numbers. Thus central, southern and eastern Bengal is a compact and contiguous Muslim area with a population of over 30 million Muslims and only less than 10 million Hindus.

In Assam, which is an apparently Hindu majority area the distribution of population by districts reveals that three districts have a majority of Muslim population exclusive of tribes and one i.e. Sylhet has a 60.71 per cent majority of Muslims. These districts, are, at the same time, contiguous with Muslim Bengal. These are Goalpara in the west and Nowgong and Cachar in the centre. The following are the population figures by communities in the districts.

Districts	Assam Population ¹			
	Hindus	Muslims	Tribes	Scheduled Caste
Cachar	173,855	232,950	178,264	51,961
Khasi & Jaintia Hills	14,676	1,555	103,567	63
Naga Hills	4,158	531	184,766	
Lushai Hills	2,425	101	147,042	22
Goalpara	282,789	468,924	237,993	23,434
Kamrup	637,457	367,522	197,926	
Darrang	328,283	120,995	260,748	
Nowgong	229,137	250,113	166,525	59,214

¹ See map No. 4.

Sibsagar	593,007	51,769	360,768	
Lakhimpur	457,509	44,579	335,230	
Garo Hills	13,518	10,398	198,074	789
	3,537,000	3,442,000	2,346,903	145,483
Total Population		...	10,205,000	

These figures reveal two interesting features: (1) The importance of the tribes, especially their overwhelming preponderance along the hill tracts of the Assam Burma border; and (2) 'Hindu' Assam mostly consists of four districts i.e. Kamrup, Darrang, Sibsaigar and Lakhimpur in the Brahmaputra valley. The tribes being unable to stand on their feet in the present, their future may well be safeguarded within the framework of the Eastern Pakistan lands of which they would constitute the 'natural frontier' on the east and to which they would be a vital defence zone. It must be mentioned here that during recent months a great deal of publicity has been given to the pro-Congress views of some of the tribal leaders. As a matter of fact, however, the vast mass of the tribal peoples inhabiting this strategic zone, have hardly had an opportunity of indicating their wishes for or against the Pakistan scheme in relation to their homeland. The Hindu zone of the Brahmaputra valley is so hopelessly cut off from Hindustan that its autonomous future within Pakistan seems the only solution.

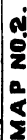
Lastly, the special position of tremendous importance that Calcutta and the navigable Hooghly occupy in relation to the economic framework of the Eastern Pakistan lands, cannot be easily passed over. The inclusion of Calcutta in Pakistan cannot simply be

taken for granted, because it is situated in the 24 Parganas district where the proportion of Muslim to Hindu population is one to two, and in the city itself out of its over two million inhabitants the Muslims number only 497,535. But Calcutta is the natural outlet for the vast hinterland of most of Muslim Bengal and Assam and during the last 200 years its economic and cultural importance has been so closely linked with the life-circumstances of N.-E. India. The present industrial and communication pattern of the whole of Bengal hinges on Calcutta's pivotal position. Failing the desirable unity of the Bengali people within one state, two solutions may be suggested, (1) the creation of a Free or International zone consisting of Calcutta and the greater Calcutta area, with rights of equal access to Pakistan and Hindustan. (2) Pushing the Pakistan boundaries in the south across the 24-Parganas district to the line of the Hooghly, while maintaining the free status of Calcutta. The resulting loss of Hindu area, may be compensated for on a basis of exchange of territories from the Dinajpur, Malda and the Murshidabad districts.

Migrations of Population.

After the possible boundaries of Pakistan lands have thus been indicated in the barest outline, it may be added that problems of adjustment on the border regions and some necessary migrations of population are bound to arise. For, a boundary problem pre-supposes disagreement between the two neighbouring states (over the location of the line). The lessons of political geography point to the fact that most boundaries are man made, that is, artificial. They are no phenomena of

KNOWN AS PERCENTAGE OF TOTAL POPULATION



nature but are the result of agreements reached from time to time between the parties concerned. It is needless to point out instances of these adjustments from all over the modern world, when migrations on a large scale and exchanges of population have successfully solved outstanding political and territorial problems. Thus, in the India of the future also, human and political consideration should weigh more heavily than mere perfectness of 'geographical advantages'. In all boundary problems in India, arising out of a division along communal lines, a special consideration, will be the peoples of the border areas who would be most directly affected. And it may well be realized, that howsoever fairly and sympathetically the problem may be approached, their interests cannot be considered as great as those of millions of people affected by the larger scheme.

This brings us to the question of migrations of population which may be necessary. True, the Indian peasants cling to their land with all the traditional tenacity of peasants anywhere, and mass-transfers would involve millions of people, who in many cases, will have to face unbearable changes of environment and climate. But to-day the idea of such a 'surgical operation' if it has to be, is after all not so horrifying as it would have been a generation ago. After the World War I, an outstanding example of national adjustment on this basis was the 1923 exchange of population between Turkey and Greece. Its long range beneficial effects were only realized a little later. To-day we are witnessing this necessary adjustment in the transfer of millions of German nationals from the eastern and central parts of Europe to Germany proper. It had to be

done. But it must be done humanely, as has repeatedly been pointed out by the Soviet authorities; and as President Benes earlier declared, "The hardships and injustices of population transfer would be worthwhile, if they helped to establish a more permanent equilibrium."¹ However, it is not claimed that as a result of such shiftings of population several million Hindus would not remain in Pakistan lands and several million Muslims in Hindustan. But the bulk of the Hindus and Muslims would be inside Hindustan and Pakistan respectively. The division carved out as a result of agreement between the communities is bound to be adjusted in its minor details at the conference table, where it is hoped the advice of geographers, ethnographers and sociologists will carry due weight with the politicians.

The boundaries of the Pakistan lands, as has been suggested above in a general way, remain to be examined in their physical as well as politico-strategic concepts. What would then be the frontiers of Pakistan? In the west the entire mountain girdled, traditional 'N.-W. frontier of India' will be Pakistan's responsibility. Thus, all the land 'gateways' into Hindustan (i.e. Makran route, Bolan, Gomal, Tochi and the Khyber passes) through which came many an invader to India, will lie within this new state. In the north, high ramparts of the western Himalayan ranges, traditionally 'safe', will constitute the common responsibility of both Hindustan and Pakistan. On the south-west alone, the western Pakistan will be washed by the Arabian sea waters. In the east the comparatively 'unnatural'

¹ Coupland, *Future of India*, Pt. III, op cit., p. 90.

frontiers of the Sind and Rajputana deserts and the easily traversed Ghaggar plain and the Jumna-Sutlej water parting, will delimit the two states. The northern boundaries of the Eastern Pakistan land remain problematical, but will, in any case, lie adjacent to the sparsely populated and backward Himalayan tracts of Nepal, Sikkim, Bhutan and Tibet. On the east, as has been suggested, the natural divide of the Patkoi and Naga hills, the Manipur Plateau and the Lushais and the Arakan Yomas, mark it off from Burma. The water of the Bay of Bengal rushing up the mouth of the Padma, the tidal flats of the Sundarbans and the opening of the Hooghly, would constitute the southern border, providing the obvious contact with the wide world across the seas. The common frontiers with Hindustan in the west would run across the flat plains of the Hooghly, the outer fringes of the Chotanagpur plateau and the Bengal-Bihar Ganges valley.

Viewed thus, the Pakistan lands exhibit extensive land frontiers with the north-western, northern, and the eastern neighbours of India, Hindustan will possess hundreds of miles of sea-frontiers all along the peninsula and there will be comparatively 'unnatural' and easily crossable frontiers between the two states. Indeed, from the point of view of ideal security the most impassable frontier is the best; the towering ranges of the Himalaya are an ideal frontier. But with the development of modern technology with complex demands for raw materials, not completely available within the limits of even the largest states, frontiers facilitating communication are economically desirable. Thus, security versus the benefits of

foreign trade, separation versus communication — this has been the dilemma of the modern state.¹

Frontiers and Defence.

It may be noted that a great deal of loose talk about 'weak' frontiers and implications of enormous financial expenditure in relation to the defence of the future Pakistan lands centres round the 'boundaries' of the proposed Muslim state. But instead of any hasty conclusions a sober examination of facts and possibilities should be brought to bear on this problem. In fact, the question of frontiers and defence should be viewed in terms of geographic and political realities. Broader aspects of strategy and technological advance should be considered in a dynamic sense. The calculations of the strategist should be based not only upon the number of troops, warships, aeroplanes, tanks and guns, that are at the disposal of individual states, and upon such potentialities as raw materials, man-power, industrial and agricultural productive capacity, as well as the ability and training of the armed personnel, the geographical formation of frontiers, and the situation and strength of air and naval bases; but also upon the numbers and strength of each individual state's enemies and allies. It is argued, that it will be precisely on the bed rock of the instability of defence and poverty of resources to overcome it, that the ship of Pakistan will founder—if not otherwise. It is said that the hostility of the tribesmen on the west, the aggressive moves of the Russian 'imperialists', the danger of an all 'powerful Hindustan

¹ R. S. Hupe: *Geopolitics*, p. 216 see also R. Peattie: *Look to the Frontiers*, pp. 53—68.

in such close proximity, and above all, the heavy expenditure necessary to meet all these contingencies, will not let the Pakistan states live for a day. The answer is simple. The hostility of the tribesman is partly economic and partly political and with the removal of both the causes it would only be reduced to a local plane.

The Pakistan lands are bound to establish friendly relations with the neighbouring Muslim states of Afghanistan and Iran in particular, and the Middle-Eastern world of Islam in general. Afghanistan, Iran, Iraq, Saudi Arabia and Turkey do not keep vast armies to guard their common frontiers with their Muslim neighbours. Why should Pakistan require such military vigilance? In fact, the present day tendencies of cohesion of the Muslim states manifested in the solidarity and amity of the Arab League, are bound to cover a much larger field in the Islamic lands which stretch from S. W. Asia to India. On the east, the advantage of a physical barrier between, Tibet, China and Burma and Pakistan would be tremendous. Moreover, the common interests of Burma, Pakistan, Malaya and Indonesia, as Indian ocean-powers would preclude aggression from either side.

As to the intentions of Russia, opinion may be divided between those who consider Soviet foreign policy as fundamentally based upon peace and non-aggression and those who like to give it an 'imperialist' angle. According to the former view, a progressive Pakistan state amiably disposed towards the peoples of the Soviet Union and their role in world politics has nothing to fear from such close proximity from world's one of the two great-

est powers. A hostile Soviet Union, in any case, would be capable of making short shrift of both Pakistan and Hindustan. In the age of the long-range aircraft and the atom bomb,¹ the peoples of Hindustan would be ill-advised to dream of security based on geography alone. In terms of geographic inter-relationship, geo-strategic conceptions rather than geopolitical 'power-politics' notions should guide Indians to reach sober conclusions. The idea of a rich and powerful Hindustan ready to crush Pakistan militarily, firstly, runs counter to the very fact of Pakistan being brought into existence by mutual consent; and secondly, a world order, (as is visualised by the peace loving peoples of the world) based upon the birth of the International Security Organization under the U.N.O. and the maintenance of peace, would hardly let Hindustan devour Pakistan, and in the process ignite a world conflagration. The protagonists of the idea of a 'world state', taking objection to the conception of the realization of self-determination for Indian Muslims in the shape of Pakistan, must realize that the future will see not the disappearance of the 'small' states (in a post-war Europe have emerged intact Poland, Czechoslovakia, Austria, Hungary, Yugoslavia, Albania etc.) but a combination of like minded states. When the passions of the moment die out, Pakistan and Hindustan, while remaining independent, may work out a system of joint defence on the basis of common interest. The U.S.A.—Canadian and Pan-American defence are instances in point.¹ A Hindu² writer of great reputation has very aptly put

¹ Cressey: *The Basis of Soviet strength*, pp. 241—42.
For conceptions of Geostrategy versus Geopolitics see
Ibid., Chap. X, pp. 230—52.

² Panikkar, *The Future of South-East Asia*, p. 39.

forth the idea of a triune commonwealth—a reconstituted India, on the basis of the complete equality and independence of Pakistan, Hindustan and Burma in the organization of common defence and peace in South-East Asia. A similar idea of south Asiatic solidarity based upon the complete freedom of the constituting units in a new set-up was recently stressed by H. H. the Aga Khan¹ when he said, “I envisage a Pakistan as part of an Indian and South Asiatic Confederation, to include Burma and Siam, in the east, probably Afghanistan and possibly Iran in the west and certainly, Ceylon in the south—a great Asiatic confederation.” And amplifying his idea, he added, “This confederation would have no frontiers between its constituent members in the normal sense of the word, each state being a unit, like the units of the British commonwealth. All those things which affected the confederation as a whole would have to be handled by a body representing all the units of the federation, while, in other matters, each unit would look after its own affairs and would work out its own social, economic and intellectual life.”

For, no one should minimize the tasks of the defence of Indian interests in the India Ocean from India; for, with the disappearance of the British control the sea to the south will cease to be a “British Lake.”²

¹ In an interview at Bombay, published in the Calcutta “Statesman,” 9-2-46.

² Panikkar, *The Future of South-East Asia*, p. 45.

Chapter IV

The Geographic Personality of Pakistan lands

Geographically, the two Pakistan lands lie at the opposite ends of the Indian sub-continent and therefore are characterised by their variety of structure, relief, and climate. Indeed, they possess a geographical personality of their own with its attendant human and economic patterns.

The North-Western Pakistan Lands

Roughly, on the east and south-east the region is bordered by the water-parting of the Ganges and the Sutlej in the north, and by the Thar desert in the south. In the west runs the complex of highlands and mountains from the north to south, outstanding being the 11,000 ft. Sulaiman mountains and the barren 7,000 ft. Kirthar ranges which almost touch the sea in south Baluchistan. The outer Himalaya, the low Siwaliks and the ancient Potwar plateau flanked by the scarp of the Salt Range, form the northern girdle. A region of special interest is the sub-montane tract, consisting of the Siwalik chain which closely hugs the Himalaya. Here rainfall is fair (from 30-40 inches) and the soils are usually good and retentive of moisture. With the exception of parts of the Ambala division, the rest falls within Pakistan. There are many gaps in the western

mountain wall through which in the past many an invader has penetrated. But to-day these are the gateways through which the Pakistan lands make contact with the fast awakening Muslim world and the gigantic neighbour the Soviet Union.

These are lands of extremes of temperature and dearth of rainfall. In addition to the depleted summer monsoon, there occur winter rains due to small cyclonic storms moving India-ward through Iran and Afghanistan to the North Western Frontier Province and the Punjab. But still, most of the limited annual precipitation is from the monsoon. Irrigation has always been a necessity and has therefore been practiced since time immemorial—from the heyday of Mohenjodaro to the present. Half of the 75,000 miles of Indian canals cut through the Indus valley.¹ The norther area is drained by the Indus and its five famous tributaries of which only the Sutlej rises beyond the Himalaya. All bring plenty of water from the melting snows and soft sediments from the young rocks of the Siwaliks. They spread the fertile silt but raise their own beds and shift their courses frequently with perceptible results.²

Western Punjab :—This is the real land of the five rivers with a low, light and variable rainfall (from 5 to 13 inches),—a land of hot winds and blazing sun. Much of it was a semi-desert and the abode of nomads in early Mughal times. The development of modern canal irrigation and recent colonization has brought about a vast transformation (dating back to 1892). There are no

¹ Cressey : *Asia's Land and Peoples*, p. 466.

² Wadia : *Geology of India*, p. 286.

less than six such colonies and both the 'rabi' and the 'kharif' crops are served by irrigation. There is an ingenious combination of well and canal irrigation and these are the wheat lands par excellence. Other important crops are maize, oilseeds, gram, rice, and pulses. Significant developments have taken place in cotton cultivation.

Sind :—Sind belongs to the lower valley of the Indus and is flat and arid for the most part, displaying the extremes of desert climate. The region from Attock to the sea is a dry tract with a rainfall averaging less than 10 inches; therefore agriculture only blossoms here with irrigation. The soils are solely alluvial, but vary in character from drift sand to light clays and are impregnated with salt. Though they are not as fertile as those of the Ganges delta, water where ever available puts life into them. Indeed, Sind is the gift of the Indus. For eight months in the year the Indus is a comparatively small river with little surplus for the canals. The four flood months are interlinked with the melting snows of the Himalaya. To store this water the great and useful barrage at Sukkur was built.

Various parts of Sind present interesting geomorphological features.¹ In the lower basin of the Indus the river bed is now on a ridge, higher than the surrounding country, aggradation being heavy and the process of silting continuous. Old alluvium called 'Bhangar' is mostly found on the tracts of the right bank of the Indus, while, the new alluvium 'Khadar'

¹ Pithawalla: Settlements in the Lower Indus Basin, pp. 337—40

covers the rest of the province. The desert expanses without exception are dotted with sand-hills which keep on shifting. In the south the Indus delta has been advancing perceptibly and many small seaports of the past have now inland locations; the rate of the delta growth is said to be about 4 yards a year on an average. Rock disintegration is common; floods are a dreadful menace; and Sind falls within the range of severe earthquakes due to the continued process of settling of the Tertiary rocks.

Sind also possesses the useful port of Karachi which is bound to flourish more than ever as the main outlet of the Pakistan Commerce.

Baluchistan : is divided up into Persian Baluchistan the Khanate of Kalat; a British Indian province; and Punjab plains and foothills. With the exception of the Indus valley and the narrow coastal district the entire area forms the south-eastern part of the Iranian plateau. Most of the surface is covered with the Sulaiman, Kirthar and Hala ranges with intervening plateaux, long valleys and many arid plains.

Geologically, the formation of the country belongs to a recent age. Rocks of the earlier period are absent and Cretaceous formations are found to be the earliest. Nummulitic limestones and sandstones abound. There are occasional intrusions of basalt and evidence of volcanic activity is found in many dead and active volcanoes i.e. Kohi-Taftan (13,500 ft.). The hydrography is typical of an enclosed and dry area. There are regions of inland drainage as well as those served by

small rapid streams running with water only for a short period. Most of the water evaporates or is utilized for irrigation before it reaches beyond the confines of the hills.

The climate is extremely severe with great extremes of heat and cold. The Makran coast is probably one of the hottest tracts in the world. Rainfall is everywhere below 5 inches in the year. Thus agriculture is only possible with irrigation,—and even then in a only few favoured spots. Two possible lines of development are indicated, by the increase in fruit culture and the discovery of useful minerals.

The Eastern Pakistan Lands

Speaking generally, the Eastern Pakistan lands may primarily consist of central, southern and eastern Bengal along with parts of the Brahmaputra, and Surma valleys and a stretch of hilly country extending from the ancient Assam plateau to the younger highlands on the east. But in spite of the important eastern peripheral lands, the core of Pakistan would be the vast alluvial lands which to-day lie within the province of Bengal. Much of this areas is the united delta of the two mighty Indian rivers, the Ganges and Brahmaputra, where the creative energy of these two rivers has full and free play. It is a fertile alluvial semi-aquatic plain, covered with a network of 'bils' and 'khals' (rivers, streams, ponds and creeks). If Punjab is a land of five rivers then surely this is a land of five hundred rivers! "The waters here widen out into endless vistas and the lands are in a process of perpetual building and unbuilding by a

wide and interlaced network of canals and streams while an endless procession of coconut clad villages and itinerant hamlets, containing a swarming population fringes the marshes or the river banks, which are higher than the surrounding country and are always accessible by water. Fish is abundant throughout the year and the paddy lands extend right up to the doors of the peasant's huts. Man here is essentially a child of the rivers.'¹ The Ganges with its main channel the Padma flows in a south-eastern direction to meet the Brahmaputra, though hardly 200 years back both found a separate course to the sea and flowed 150 miles apart.² The Teesta another major river flows down the Himalaya to the south now joining the Brahmaputra. The eastern branch or the older main channel of the Brahmaputra runs into the Meghna and then the joint millions of tons of water of these rivers empty into the Bay of Bengal.³ In addition, very many rivers rising in the Himalayan foothills flow down to the Ganges or the Brahmaputra. Similarly, many distributaries take off from the Ganges on their southerly course to the sea. It is a great pity that most of these small rivers, both of the north and the south are put to little use. Their beds are so silted up that they only flow freely (and frequently flood) in the monsoon season and are dry or stagnant in winter. The seaward margin of the Ganges delta is known as the Sundarbans after the name of the Sundari trees (tidal mangrove forests). The whole region is a maze of intricately cut tidal channels. Over

¹ R. Mukherji : Changing Face of Bengal, pp. 19—20.

² Kishman : Geology of India and Burma, p. 25.

³ Governor Casey : Development of Bengal's Water Resources, the Calcutta "Statesman," Overseas Edition, 13-12-45.

these plains the average rainfall ranges between 80 and 100 inches annually. It is regular and never fails. But the more one goes west the less it becomes and is more eccentric in its time of arrival. But in spite of the copious rain it gets the farming and agricultural security of most of the Eastern Pakistan lands is bound up with river economy. Much of the moisture is brought to the soil by the river floods. The rivers are normally in spate during the rainy season and have a reduced flow in winter. Thus many small rivers become practically 'dead' rivers in winter. Soil erosion, helped by deforestation in the hills and plains outside Bengal, and increase in the silting of river beds, making them higher and higher, render the possibility of flood in the monsoon greater; or make the rivers 'dead' in winter; or both. The northern part of the plain consists of old alluvium, while the southern part is being continuously built up. Most of Pakistan Bengal is a land of active rivers, open drainage and flushing.

But all in all, it must be realized that the water problems will require careful and planned handling by the peoples of Eastern Pakistan. Mr. Casey, the former Governor of Bengal, put this problem in a nutshell when he said, "what Bengal suffers from is too much water at one time and too little at another—and too much in one place and too little in another. What is needed is rationalization and control of water supply and distribution in Bengal.¹ Not only will boats take the place of wheeled transport, but waterways will have to be tamed for the purposes of irrigation in western and central Bengal; and the equalization and control of

¹ The "Statesman," 13-12-45.

river waters will also prevent the increase in the incidence of malaria. In these regions the increase of population has led to the construction of embankments, roads and railways, which have further facilitated the silting up of river beds and the changes in water courses, leaving a legacy of soil exhaustion, water-logging and fevers for posterity. 'Old man river' again and again spills over these protective embankments to devastate large inhabited areas. Therefore, some of the main problems with which man is faced in these regions are co-operation in the conservation of land, in the use of water, in forest management, and control of rivers. In addition, in the material and cultural sphere, incessant attention must be paid to the reciprocal relations between rural and urban areas.

CHAPTER V

Mineral Wealth

Until recently the myth was perpetuated by interested 'authorities' in geological matters that India was lamentably poor in mineral wealth. Similarly, with the heat of the recent political controversy there has almost grown up a fashion with the politician as well as the ordinary graduate to damn the Pakistan lands with a mineral-less future. The truth of the matter is that while the Eastern Lands lack useful minerals, this can by no means be said about the North-Western area. The following pages provide a picture of the mineral resources of the Pakistan lands.

In connection with the mineral wealth of the N.-W. Pakistan the area which stands out more prominently than any other single region, is the famous Potwar Plateau of ancient origin, bounded on the south by the scarp of the Salt Range and on the north by the snowy ranges of the outer most hills of the Kashmir Himalaya. The region has always been of immense interest to geologists;—first, because of its location in a dry climate, where vegetation is poor, and rock exposures common;—secondly, because strata so exposed include fossiliferous sediments, quite unmetamorphosed, and ranging in age from Cambrian to Recent, offer excellent opportunity for the study of stratigraphy. Thirdly, apart from its purely scientific interest, the area has yielded such economically valuable deposits as rock-salt,

gypsum, petroleum and coal; and in the future will surely prove a treasure-house for many other useful items.

GYPSUM

The mineral as it occurs in the natural state is chemically a mixture of anhydrite and gypsum in varying proportions. Gypsum is a dihydrate of calcium sulphate.

It is after conversion to plaster of paris that gypsum has its main uses. Plaster of paris is extensively employed in the building trade in the form of hardwall plasters, sheets, plasterboard and wallboard, and for stucco work. The addition of alum, or other salt, to gypsum calcinated at high temperature produces quick-setting cements. Thousands of tons of plaster of paris are used annually in industrially advanced countries in pottery making as moulds. It is also used by modellers in the pottery making as moulds. It is also used by modellers, dentists, marble-workers and lithographers the world over. Other uses of gypsum are as a flux in the smelting of nickel ores, for improving or 'Burtonizing' water for beer-making. When in white, massive, and compact form it is known as alabaster which is employed for ornamental purposes. In recent years its use as an insulator against heat and cold in modern homes and offices has enormously increased. Aconustical gypsum plasters are now quite a common feature in the construction of auditoriums and rooms to reduce excessive noises.

About twenty years ago anhydrite had little little industrial application, but scientific research and application in recent years has discovered that when treated with synthetic ammonia, made from the nitrogen of the atmosphere, to form ammonium sulphate, renders it into a useful fertilizer. Much of the anhydrite is also reduced with coke to form sulphur dioxide for the manufacture of sulphuric acid. The calcium carbonate formed during one of the processes is treated with nitrogen to form nitro-chalk, which is also an excellent fertilizer.¹ Thus apart from multifarious modern uses of gypsum and anhydrite, their utilization in the cement and fertilizer industries will be of tremendous import to an agricultural Pakistan on the threshold of industrial development.

Massive gypsum usually white or light grey in colour, occurs abundantly in the Salt Range and also at several places west of the Indus. It is found principally among the saline series. In all the main gorges of the Salt Range in which large out-crops of saline series occur, and also among many of the lower scarp slopes, many tens of thousands of tons of good quality gypsum could be obtained by quarrying.

In the Salt Range area the following occurrences may be especially pointed out :—

(1) Chanuwala, to the north-east of Khewra; (2) Khewra-Dandot area; (3) Makrach; (4) Warcha Mandi; (5) Daud Khel. And in the Trans-Indus region there are (6) Mari Indus-Kalabagh; (7) Saiduwali in Dera

¹ W. R. Jones : Minerals in Industry, pp. 57—58.

Ismail Khan district; (8) Near Attock and (9) in the Kohat district of N.-W.F. Province. These are the chief deposits. The Salt Range deposits stretch through the districts of Jhelum, Shahpur and Mianwali and the two main sources are the Khewra (Jhelum) and Daud Khel (Mianwali). Excavation at Khewra has already been started as a tentative measure under the Central Excise Department. Daud Khel deposits are attractive because of their easy accessibility and good quality. Based on the latest investigations and estimates, it is hoped, that these two deposits alone will be large enough to feed a huge factory for over a couple of centuries. Calculations based on surface observations lead to the conclusion that the deposit is in the region of 200 million tons. Within recent years the annual world out-put of gypsum has exceeded 10 million tons.

In Baluchistan occurrences of gypsum have been reported from time to time by the officers of the Geological Survey of India and it is gathered that the deposits (though not yet fully estimated) will constitute a huge reserve. Similarly, the deposit in the Kohat district of the N.-W.F. Province are regarded as of practically unlimited value from the commercial point of view. A superior variety of gypsum called alabaster has been discovered in certain parts of northern Sind. The beds run 40 to 50 ft. thick extending to several hundred miles.

A technical mission of experts from the United Kingdom was lately appointed to advise on the production of artificial fertilizers for increasing the food production in the country. It is understood that

subsequently to the recommendations of the mission a detailed survey of the more important workable mineral deposits has lately been undertaken by the Geological Survey of India. But so far only the reserves of the Eastern Salt Range have been systematically investigated and estimated. Baluchistan, Sind and the N.-W. F. Province are equally rich in gypsum and anhydrite deposits. The mineral is encountered mostly in the bedded form which may be easily worked as local conditions and mode of occurrence determines. Thus N.-W. Pakistan's wealth of gypsum will be of tremendous use both industrially and agriculturally. Since the reserves are inexhaustible, they can supply the needs of the whole of India.

ROCK SALT

The deposits of rock-salt from the Salt Range and the Kohat district in the N.-W. F. Province have been worked for centuries, though in olden times transport difficulties were a limiting factor to trade. But in recent years the output increased to a total of about 168,000 tons per annum in 1938, of which about 147,000 tons came from the Salt Range area i.e. 87 per cent. and the remaining 21,000 were contributed by the Kohat district. Rock salt is now being worked from three mines in the Punjab part of the Salt Range viz. at Khewra ($32^{\circ}38'$: $73^{\circ}1'$) where the famous Mayo mines yield 120,000 tons, Warcha ($32^{\circ}27'$: $71^{\circ}57'$) and Kalabagh ($32^{\circ}58'$: $71^{\circ}33'$). The Kohat district mines are smaller and are located at Jatta ($32^{\circ}20'$: $71^{\circ}70'$) Bahadur Khel ($33^{\circ}11'$: $70^{\circ}57'$) and Kharak ($31^{\circ}7'$: $71^{\circ}5'$).

With regard to the extent of the deposits, it may be pointed out that sufficient reserves exist to supply the demands of the whole of India for many centuries to come. On the basis of some recent exploratory and development work it can be stated that the probable workable reserves, without attacking pillars, are at least 10 million tons.¹

It may be added that the annual consumption of salt (rock salt plus brine salt) in India is at present about 2 million tons of which 1,450,000 tons are produced in the country and the remainder imported i.e. nearly half a million tons. Therefore, the N.-W. Pakistan salt production can be increased profitably provided transport costs are cut down. In the future it should be possible to decrease the cost of extraction by introducing more machinery applied especially to haulage of the tabs from the working faces, and to loading. All this work is at present done by hand.

Most people usually associate salt with domestic uses and consider it of limited industrial utility. Therefore, the real importance of the enormous rock-salt deposits of the N.-W. Pakistan area is not fully realized. Below are mentioned some of the modern industrial uses of salt, which point the way to some of the future industrialization of these regions.

Salt is undoubtedly one of the most indispensable of all substances for the seasoning and preserving of food. But by far the greatest proportion of salt produced is used in the preparation of chemicals, especially

¹ Geol. Transactions, p. 324.

soda ash and caustic soda. Soda ash (sodium carbonate) takes from 30 to 40 per cent of the total output of salt for the manufacture of glass, soap, various sodium chemicals, and in the preparation of washing-soda. Large quantities of salt are also used for making sodium sulphate (salt cake) for the pulp and paper industry. Caustic soda produced by the electrolysis of salt, is extensively utilized in the manufacture of soap, rayon and in the digestion of wood in the pulp and paper industry, in the purification of bauxite preparatory to the extraction of aluminium, and in the refining of petroleum. Chlorine, made from salt has also a wide industrial application. Coaltar dyes and products, the ceramic industry and refrigeration agents consume large quantities of salt. Rock-salt, in its natural state, is employed for tanning hides, in fertilizers and stock feeds. Sodium Chlorate obtained from salt is used largely as a weed killer; and the metal, sodium, is produced from salt.

CHROME ORE

Chromel¹ ore was first definitely located in 1901 in the neighbourhood of Khanosai and near Hindubagh. More comprehensive studies nearly 15 years later showed that chromite of a high grade occurred as veins and irregular segregations in serpentine. The chromite deposits occur as bodies of ore of very variable shape and size and have been regarded as magmatic segregations.

In 1919 a new occurrence of a low grade chromite

¹ Information based on A Note on Indian Chromite by A. L. Coulson, Pub. Geological Survey of India.

(roughly 40 per cent) was discovered near Fort Sandeman.

The nature of the occurrence of chrome ore in lenticles and veins, makes it very difficult to make any reasonably accurate estimate of the reserves. The fact is well brought out when it is considered that the earlier estimates of reserves in Baluchistan have been far exceeded by the amount of ore already extracted.

During the 36 years of the extraction of ore ending 1938, 420,000 tons had been won. The Baluchistan Chrome Co. Ltd., is the chief producer. Production varies according to foreign needs. The ore, which is of high grade, is railed to the port of Karachi—a distance of 600 miles—whence it was exported (before the war), chiefly to Germany and the United Kingdom.

It is interesting to note that with the single exception of the Soviet Union, all the major steel producing countries are markedly deficient in domestic supplies of chromite and have to rely upon imports. The U.S.A. the largest steel producer has less than 1 per cent of the quantity of chromite it consumes.

Production varied as follows but compared favourably with the world's leading producers :

TABLE—(In tons)

Countries	1937	1938	1941	1942
N.-W. Pakistan	27,209	21,589	38,200	34,900
All-India	—	22,000	50,100	49,600
All-Asia	—	60,000	—	—
U. S. A.	—	400	—	44,000
Union of S. Africa	—	—	—	120,000
Turkey	—	104,000	—	60,000
Cuba	—	—	—	49,000
United Kingdom	—	100	—	—
S. Rhodesia	—	160,000	—	—
U. S. S. R.	—	190,000	—	—

The average production for all India is now roughly 50,000 tons of which the major proportion is contributed by the western Pakistan areas. Of these 38,000 tons are exported; 11,000 tons are used for refractories; and less than 1,000 tons for steel and chemicals.¹

SULPHUR ORE RESOURCES

Sulphur has been known for ages as a raw material of varied commercial applications, and unlike some other elements its demand is ever increasing. Afghans always used it for the manufacture of gunpowder and their source of supply lay hidden in the extinct, yet inhospitable, volcano of Kohi-Sultan in western Baluchistan. It is not known how long they pursued this trade but there is enough evidence to show that they worked these sources till very recent years. As a

¹ World figures based on the Statistical Year Book of the League of Nations (7th Issue 1942-44) Geneva, 1945 (p. 168).

matter of fact they had concentrated on some of the richest ore deposits, sometimes leaving behind a slag containing 80—85 per cent free sulphur.

The sulphur deposits are scattered all around the peak of Kohi-Sultan (Miri 7650 ft.) and comprise three well defined brimstone deposits. Two of these were worked and actually one deposit has been almost exhausted. The two other important deposits remain and among themselves share reserves estimated at 200,000 tons or slightly more. The more accessible deposit contributes nearly 90 per cent of the reserves. Besides these two bigger deposits, there are a host of other smaller deposits which are of limited economic value.

The above mentioned deposits are exposed on the surface and are generally worked by open cut methods. Besides these quarries, there are some more deposits in Baluchistan which under-lie later geological formations and necessitate drilling and mining. These deposits are situated some 70 miles from Sibi and suffer from the worst type of climate. The hot season continues for nearly 8—9 months and the scarcity of water makes things still worse. The reserves of the Sanni sulphur deposits have not been estimated with accuracy, but it is felt that, if the Kohi Sultan deposits are exhausted, it may be worth while working these other mines. Sulphur ore is also known to occur in several other localities of Baluchistan, but detailed information about their reserves is lacking.

The difficulties of procuring labour, the problem of road maintenance and transport, the scarcity of water and the vagaries of climate, will always operate

against the working of these reserves. But their exploitation should be undertaken not with the idea of immediate gains but with a long term policy in view.

Koh-i-Sultan Deposits

Surrounded by the dull black or grey basaltic fan, the yellow glistening peak of Miri affords a pleasing relief to the sight; but all that is bright and yellow is not sulphur ore of commercial importance. The towering peak of Koh-i-Sultan (Miri 7650') is nearly 25 miles from the Nok-Kundi Railway Station on the Quetta-Zahidan branch of N. W. Railway and almost the same distance from the Afghan border. Situated in an extremely arid region, the volcanic mountains in general, and Kohi-Sultan in particular, seemed incredibly secret and sacred in appearance only partially challenged as a result of World War II and the attendant pressing need for sulphur.

The roads glide up the mountain along old water channels which remain dry almost the whole year only to be washed away during the rainy seasons (mostly winter and May-August). The roads reach almost to the foot of the quarries; where they do not, use is made of chutes. An aerial ropeway was also constructed to transport the won ore to the main loading platform.

The main deposits consist of those forming the Batal and and Miri sulphur deposits. The Batal deposits being more readily accessible were exploited first; and the less accessible, though bigger, deposits of Miri were worked when the Batal deposits were showing signs of exhaustion. The ropeway was constructed

in order to transport the Miri ore to Batal from where it was easier to despatch.

The grades of the ore vary from deposit to deposit and even from place to place in the same deposit. Fine grade ores containing more than 50 per cent free sulphur were available in large quantities.

As soon as the American sulphur became plentiful after the close of the war, work at Koh-i-Sultan was stopped on the plea that the mineral was using precious railway transport and that the manufacturers preferred the superior though more expensive American sulphur. And now the deposit has been sold. Nothing more harmful could have been done.

“A nation's consumption of sulphur is a measure of its industrial progress. This statement is pregnant with truth, for sulphur, or brimstone, as it is sometimes called, is one of the most widely used elements in modern industry, and few important manufacturing processes do not employ it in some form or other. This commanding position of sulphur as an essential raw material is due to the fact that sulphuric acid is the most important single commodity in the chemical industry. One of the chief sources of this acid is sulphur.” Dr. Jones has thus well brought out the importance of sulphur and sulphuric acid. For a real industrial advance, the Pakistan lands will have to establish sulphuric acid plants, which will be basic to the manufacture of fertilizers, petroleum refining, chemicals, rayon, cellulose film and the iron and steel industry. Other important uses of Pakistan's domestic resources of

sulphur would be to control pests on fruit and field crops; in the sugar growing industry; and as a weed-killer.

GLASS MAKING SANDS IN THE TRANS-INDUS SALT RANGE (Punjab)

A mineral of great industrial use is glass-making sand, the existence of which seems to have been ignored so far. Some recent reports indicate that a fairly large amount of coarse to fine-grained glass sand exists in certain parts of the Trans-Indus Salt Range in beds of varying periods of the Secondary Age. These sandstones and grit bands extend along the sharply off escarpments of the Surghar Range, mostly in the Mianwali district of the Punjab. These deposits are said to occur parallel to and below the coal horizons. This region is within a few miles of railway communication serving the adjacent coal area.

Further, the work of these deposits may prove to be of immense importance to Pakistan as they would provide a basis for the development of glass-making industry.

MINERAL RESOURCES OF THE NORTH-WESTERN FRONTIER PROVINCE¹

At present the production is small and mainly consists of salt, limestone, marble and road-metal. But

¹ Summarised from Professional Paper No 2 Vol. LXXV (1940) by A. L. Coulson.

there is enough indication of the existence of many other useful minerals.

Marble :—Production is outstanding. There are three chief areas (1) The Mullagori country in the Khyber Agency, where Shahidmena and Kambela Khwar marbles are pure, white saccharoidal stone, translucent in thin masses, and equal in appearance to the Makrana marble of Jodhpur and Carrara. This is especially useful for vases, plates and vessels and is also excellent statuary material. (2) At Maneri in the Swati tahsil of the Mardan district, there are coloured varieties as well as good white marble (3) On the Swat-Mardan district border known as Ghundai Tarako there seems to be the largest quantity of statuary marble in the province. This province is also exceedingly rich in deposits of limestone, which seem to be inexhaustible. There are also the extensive and useful Attock slates, occurring at Nowshera in the Peshawar district.

Gypsum :—A zone of alternating bands of dolomite and gypsum from 450 to 500 ft. in thickness is found (1) near Saiduwali (32°12' - 71°6') at the southern end of the Khasor Range; (2) south of the Shirani country there are large reserves; (3) there is a small area in Hazara district where the bed reaches a thickness of 100 feet; and another gypsum area lies in the neighbourhood of Bahadur Khel eastward to the Indus covering an extent of about 50 miles in length and 20 miles in width. Here gypsum occurs in discontinuous masses occasionally attaining a thickness of a 100 feet. In the lower portions there are shales strongly impregnated with petro-

leum. In N.-W. F. Province itself, according to Gee, the quantity of gypsum available from the commercial point of view is unlimited, though most of the resources, so far, remain untouched.

Coal:—It has hitherto been found principally in three areas, (1) The Eocene coal of the Hazara district in the Dore river valley at Dhamtaur ($34^{\circ}8'$: $73^{\circ}16'$) is of low economic value due to crushing between adjacent limestone formations as a result of earth movements. (2) The only coal of possible economic importance is in Kohat district in the Buroch river gorge. Coulson suggests the use of a ropeway to take the coal to the Punjab and is in favour of further investigation with regard to these deposits. (3) A small amount of lignite occurs one mile east of Mira Khwand ($32^{\circ}21'$: $69^{\circ}51'$).

Iron ore:—It is found in the following localities. (1) Excellent ore, believed to be magnetic iron sand, is found in the valley of the Panjkora river. (2) Ore which is earthy hematite quartzites is sited between Sanoghar and Mastey. (3) There are also finds in Hazara and in north and south Waziristan.

The *oil shales* of the Kohat district are said to be of limited possibilities. But considerable possibilities are suggested for the find of petroleum in the Bannu area; their utilization by geophysical means is deemed possible.

Among other minerals may be pointed out, the lead ore of Chitral; the manganese of Chitral and Kohat districts; the chromite in north Waziristan near Pai

Khel; and the seemingly good possibility of rich mica deposits in the Hazara granites. There is, moreover, sulphur on Chitral-Afghan border, in Shirani country, Dera Ismail Khan and Kohat. Pyrite deposits are to be found in the Mardan district; and there is evidence of copper ore in Chitral and north Waziristan.

Problems and possibilities in Mineral Development

The present mineral exploitation in Pakistan area seems far from satisfactory. Though one may not hope for spectacular discoveries, the present meagre developments can be certainly considerably expanded. In this connection it will be worth while to recount the achievements in the Soviet Union in order to draw useful lessons. In 1917 less than 10 per cent of the country had been mapped even on a $\frac{1}{4}$ inch scale. Round about 1920 only a few geologists were available for leading the work and training the large number of students needed. But from 1922 to 1927 (before the era of planned economy) many hundreds of students were trained in geological work and took part in the great exploratory expeditions to the Kola Peninsula, the Urals and Central Asia.¹ After the inauguration of the first Five Year Plan geological science acquired high national importance and there was no dearth either of financial support from the government or of interest among the masses of the people. In 1942 the Central Geological and Prospecting Institute, corresponding to the Geological Survey of India, had a permanent technical staff of 500 under its control; and in addition, there were

¹ Henry: Science and Technology in the Soviet Union, p. 9. See also Cressey: The Basis of Soviet strength, pp. 108—9.

no less than 10,000 scientists and technicians associated with that work. In 1936 the expenditure on the work amounted to nearly 33 crores of rupees.¹ The great importance of geological work was further emphasised when the Soviet Cabinet was expanded in November 1946 to include among others a minister holding the portfolio of geology. The remarkable mineral development of the then backward Central Asian Muslim Republics of Turkmanistan, Uzbekistan, Tajikistan and Kirghizia is a luminous example of this planned scientific work. What do we find nearer home? Before wartime expansion, the total number of the staff of the Geological Survey of India was 35! No wonder then that Dr. Cyril Fox and other authorities visualise only very limited possibilities for the development of the mineral wealth of India in general and the Pakistan lands in particular.² So far (while recognising the valuable work done) the usual practice is the annual visits of a couple of geologists to parts of Pakistan lands in order to investigate some noticed or reported possibilities. The rest of the prospecting is done by private firms with poorly paid and ill-trained geologists. But no exchange of maps or information takes place between the geologists of different combines, and little of their work is made available to the official surveys. Naturally, private concerns are attentive only to rich and profitable deposits; for theirs is a 'get-rich-quick' psychology, and ideas of rational development do not bother them.

Therefore, in the development of the Pakistan lands,

¹ Henry : Science and Technology in the Soviet Union,

p. 11.
² The Calcutta "Statesman," 30-11-45.

which, one presumes, will be in the interest and for the well being of the common man, geological education will be an important charge on the finances of the state and thousands of young men will have to be trained as geologists. Need we then be disheartened by the present state of affairs?

Chapter VI

Power Resources

With the need for increasing industrialization and the desire for improved standards of living, the problem of fuel and power development will have to be faced by the Pakistan Lands. No country in the present day world can afford to neglect the economy and improvement of its fuel and power positions, much less the Pakistan states whose resources in the shape of coal deposits are meagre. Therefore, it behoves us to examine the various sources of power.

(1) C O A L

Most of India's highgrade Gondwana coal will be in Hindustan, but the largest proportion of Tertiary deposits will fall to the share of North-Western Pakistan lands.

The only Gondwana measures in the Punjab are the two horizons of black carbonaceous shales, which are too impure to be of economic value as a fuel. Most of the coal, as is also the case in Assam, is of Tertiary origin. These strata include important deposits much of which is good or fair quality coal.¹ The workable coal

¹ Gee: Transactions of the Mining, Geological and Metallurgical Institute of India, Vol. 33, Pt. III, January, 1938, p. 272.

measures of the Punjab belong to the Eocene (lower Tertiary) Age of the Ranikot series and are confined to the Makarwal and Dandot coal stages i.e. (1) the seam in the Trans-Indus Rrange and (2) the Dandot seam located in the eastern half of the Salt Range. In addition, the Jurassic coal and lignite beds of Kalabagh are noteworthy: in 1942 the output exceeded 10,000 tons; and Malakhel, Chashmir, Gulakhel and Kuch collieries were other promising contributors.

The Trans-Indus Range collieries: The seam crops out in the Sughar Range, the more northerly of the Trans-Indus Ranges. Makarwal seam is workable in a stretch of about 8 miles ($32^{\circ}56'$: $71^{\circ}10'$) to ($32^{\circ}50'$: $71^{\circ}1'$). The seam is reported to reach a thickness of about 12 feet, this maximum occurring in the southern part of the area. Usually the seam runs from 4 to 7 feet in thickness. The area now developed by the Makarwal Coal Company stretches from the Lumshiwal gorge just north of point 2371 ($32^{\circ}50'33'$: $71^{\circ}9'15'$) to Makarwal Kheji, a distance of about $2\frac{1}{2}$ miles to the north. These collieries have shown increased output during recent years.

In 1935 the output was 77,00 tons, while in 1941 it had reached 110,000 tons. Earlier exploitation was retarded by lack of machinery. As to the reserves of Makarwal coal, the geologists¹ who have personal knowledge of these seams hesitate to make an estimate because they feel handicaped by incomplete surveys, but 1 million tons is the minimum amount they tentatively indicate. The war years saw much greater ex-

¹ Transactions, p. 294.

plotation. The cost averaged Rs. 10—16 and the selling price ordinarily varied from Rs. 20—30; but the Kalabagh collieries were selling their lignite at Rs. 60 to Rs. 70 per ton.¹

The Eastern Salt Range Main Coal Areas:—(1) Baghanwala area, near Ara ($32^{\circ}45'$: $73^{\circ}13'$); (2) The Dandot area, including Pidh Manhiala ($32^{\circ}43'$: $73^{\circ}1'$) (3) Makrach area ($32^{\circ}40'$: $72^{\circ}54'$); (4) Dhak Katha area ($32^{\circ}31'$: $72^{\circ}25'$).

The most important coal area in the eastern part of the Salt Range, is the Dandot seam, which has been proved at a number of places; and westward the horizon is represented by shales of varying quality. Seams are irregular in thickness, ranging from three to four feet. In quality the Dandot coal is inferior to Makarwal, though it is also characterised by higher sulphur and ash content. Both the Dandot colliery and the one at Pidh have been worked since 1884, and though at that time this coal was found 60 per cent of the value of that of Jherria, the operations were closed down due to lack of nearer markets.² But the extensive seams were workable, and later gave rise to several collieries owned by different companies. The output increased very considerably during the war years, and rose to more than 100,000 tons as compared with 67,000 in 1935. The cost per ton during the war was from Rs. 10-8-0 to Rs. 18-0-0 and the selling price anything from Rs. 20 to Rs. 32.

¹ According to Hazra : A note on the Coal Industry of the Punjab.

² Latifi : Industrial Punjab, p. 298.

The skilled labour is generally foreign, and the winning of coal is mostly on contract basis. The possibilities were observed to be fair, and an increase in output of 50 to 100 per cent was considered possible.¹

Problems and Possibilities :—The occurrence of coal in the Punjab no less than 900 miles from the Gondwana coals of the Damodar valley is of great significance to the industrial development of the North-Western Pakistan lands. It is needless to emphasise that their careful utilization and conservation in order to reap the fullest benefit in the founding of many local industries both big and small, will be of the utmost importance. For, after subjecting this coal to many tests in India and abroad on the initiative of the competent officers² of the Geological Survey of India, the opinion is expressed that the use of this coal in a pulverised form should be pressed very strongly. It is also pointed out that the Makarwal coal is favourable for coking purposes. With regard to the coal of the Salt Range, it is interesting to note that though it is poor in quality yet its isolated occurrence will prove a boon to local industrial development. With careful methods of extraction and modern aerial ropeway transport, its availability for needed consumption will improve. Its poor reputation in the past is largely due to high sulphur content which led to the rapid corrosion of the inside of boilers. But with improved designs this should not prove a handicap. It may be noted, moreover, that there are approximate reserves of 2,300 million tons of Tertiary coal (mostly in Pakistan) of high sulphur content i.e.

¹ Estimate by Hazra, quoted above

² Gee : Transactions, pp. 283—84.

4 to 5 per cent. Therefore, if a systematic recovery of sulphur be attempted¹ and if even half the quantity of potentially available sulphur were recovered, Pakistan along with its natural sulphur resources would not only be self-sufficient but have a possible surplus for export to Hindustan. No doubt, the problem of desulphurisation of coal is a complicated and difficult business, but its achievement is full of economic promise. Lastly, a few words may be added about the uses of inferior coals which are Pakistan's main deposits.

(1) The conversion of coal into oil by hydrogenation
 (2) Use of powdered coal as fuel. Pulverisation is especially suitable for low grade coals and has been successfully tackled in several countries.
 (3) Coal cleaning beneficiation (dedusting or cleaning process of high-ash coal). The problem of conservation has two aspects; firstly, the maximum extraction of all coal with utmost safety; and secondly, its proper utilization, according to existing knowledge; for 'coal is not cereal that is sown and reaped yearly. Once extracted it can never be replaced.'²

These observations may be concluded by referring to the recent remarks of an able geologist in connection with the underground gasification³ of coals—especially low-grade. The idea is not a very new one. It was referred to by Siemens in Germany in 1866; and later, in 1912 Sir William Ramsay, Scottish chemist, started

¹ Sen : Science and Industry, p. 7.

² Chatterjee : Presidential Address, Baroda Science Congress 1944, op cit., p 107

³ Condensed from the Presidential Address of B. Wilson Haig at the Mining, Geological and Metallurgical Institute of India, Calcutta, January, 1946.

experiments; but the results did not mature due to the conservatism of coal owners (a tendency far too common in the era of private ownership). But the leaders of the Bolshevik revolution readily took up the idea and Lenin himself wrote an article in 'Pravda' about its far reaching consequences, pointing out that thereby, not only would the dangers and drudgery of coal mining be eliminated, but also that more energy at lesser labour cost would be made available. His foresight has been rewarded by the success which has been achieved by the Soviet planners. Several plants are in operation at Podzemgaz in the Urals, at Golovka and Lisichansk and Kurakhova in the Donetz Basin and the Moscow coal-fields. More stations, it is said, are under construction.

Instead of coal being mined and brought to the surface, either to be turned into gas or burnt as solid fuel; it is gasified underground 'in situ' and the gas is pumped to the surface and distributed in pipes to be used as gaseous fuel, to make steam for driving electric generators and also to be converted into artificial manures by ammonia synthesis or to synthetic oil fuel by the Fischer-Tropsch process.

It is recognized by all that the cutting and loading of coal underground is most troublesome and injurious to human health; and the more industrially advanced a country becomes, and the more conscious working men are of their welfare, the less popular the miner's job will become. It will be worth the while of the leaders, planners, scientists, chemists and engineers of the Pakistan lands to benefit from technological advances, especially in the case of their low-grade coals. The method of utiliza-

tion described above seems eminently desirable. It will enable a cheap gaseous fuel to be produced at several generating stations¹ round which many small industries may be developed. The matter should not be lightly dismissed; it may revolutionize the utilization of Pakistan's Tertiary coals.

The conservation of Pakistan's meagre coal resources is a national trust. It cannot be left to the anarchy of individual ownership. The Nationalization of the coal mines offers the only hope for a rational and scientific utilization of this valuable source of power. The decision of the British House of Commons in this respect on 31st January, 1946 is a necessary pointer in this direction² and an example which should be followed.

(2) O I L

The occurrence of petroleum in India is restricted to the extra-Peninsula, where it is found in Tertiary rocks of ages ranging from Lower Eocene to Middle Miocene. There is an analogy between the three oil areas of Burma, Assam and the north-western Punjab, which appear to have been gulfs or arms of the nummulitic sea which were filled up by sedimentation.³ Of these deposits the most important lies in the Chindwin-Irrawady valley of Burma, while the other two viz the Assam-Arakan Belt and the North-Western (Punjab, N.-W. F. Province, Sind and Baluchistan) lie mostly within the Pakistan lands.

¹ Chatterji: Presidential Address, p. 104.

² See also Ibid., p. 115.

³ Wadia: Geology of India, quoting from Pascoe, op. cit., p. 256.

Most of this Pakistan oil is in the north-western lands. The production amounts to about 65,000,000 gallons annually, representing nearly 20 per cent of the total output of petroleum from India and Burma.¹ Excellent seepages occur at a number of localities in the Potwar and the Salt Range and in the neighbouring geologically similar area of the N.-W. F Province. Appreciable amounts of oil have been obtained from the anticline at Khaur and in the nearby Dhulian area; and structures suitable for the accumulation of large quantities of oil occur at several places, some of which have been tested.² But the official geologists are not prepared to commit themselves to definite statements concerning the prospects of these oil fields.

The earlier oil-field was that of Khaur where drilling commenced in 1914 and to date 3,000,000 barrels have been recovered. Then a little before 1920 the dome at Dhulian (33°12' : 72°21') also on the Potwar plateau was drilled with success to a depth of over 7,500 ft. and began producing about 500 barrels of oil per day. A third source was found into the dome at Joya Mair (33°1' : 72°45'). In addition, the Kohat district includes several anticlines of potential value, composed of Murree and Siwalik strata. Until recently most of the oil found in commercial quantity has been obtained from the Middle Tertiary sandstones.

The borings at Khaur are deeper than those at Dhulian. Both these areas lie 30 to 40 miles north of the Salt Range scarp. The Khaur field

¹ Gee : Transactions, p. 272.

² Ibid.

lies a few miles to the north of the Dhulian axis and is more steeply folded and exposed to a lower geological horizon. The most prolific group of seepages occurs in the south-western corner of the Salt Range from Dom nullah north-east of Khabakki ($32^{\circ}37'$: $72^{\circ}14'$) to the north of Son Sakesar. Other locations are Jaba ($32^{\circ}52'$: $71^{\circ}41'$), Amb ($32^{\circ}30'$: $71^{\circ}56'$) and east of Chhidru ($32^{\circ}33'$: $71^{\circ}46'$). Further, west of the Indus in the Trans-Indus Range occur a very large group of seepages (said to be the largest in this part of India) near Kundal ($32^{\circ}35'$: $71^{\circ}18'$). An idea of the output of the Punjab oil-fields is given below.

TABLE

Production Figures of Petroleum in the Punjab since the commencement of Drilling at Khaur.

Year	Production (in gallons)		
1915	251,494
1918	750,807
1922	1,362,315
1923	11,805,010
1929	19,208,880
1932	5,900,480
1936	4,401,040

Oil-shows are found in association with the Barail series in the Surma Valley and in Upper Assam. There is separation of oil and coal measures, for, although most of the oilshows occur well below the thickest coal

seams; and petroliferous coal seams have been noticed.¹ The coal measures of Assam hills are overlaid by the Surma valley and extend south through Chittagong to the Arakan coast of Burma. But indications of petroleum are common in the Surma series in several localities.²

Oil-gas has been burning for ages with observable flames inside the mouths of caves near Barabkund and Sitakund in the Chandranath Hills which run N.-E. of Chittagong. But no detailed geological survey of this region for possibilities of oil has so far been undertaken, because the area remains the India Burma Petroleum (I.B.P.) Company's preserve.

In recent years, a great deal of interest has centred round the possibility of large oil reserves in Sind. In 1939 the press both in India and England was full of reports of the discovery of oil in that province. The *Daily Telegraph* of London wrote on 5th January, 1939 that "rich sulphur deposits have been discovered in Upper Sind and also sufficient traces of oil to justify an examination by an oil expert. The area concerned is about 24,000 acres." In its issue of 15th July 1939 the *Times of India*, Bombay, reported that oil exists in two localities (1) Jacobabad (2) 14 miles from Karachi near Malir. It was added that one of these deposits may be even bigger than Bahrain. The *Sind Observer*, Karachi, wrote on the same day that an oil find was reported near Jherruck, on mile 108 on the Karachi—Hyderabad road. And the *Daily Gazette* of Karachi featured the next day a report from a wel-

¹ Wadia : *Geology of India*, p. 250.

² *Ibid.*, p. 256.

informed correspondent, to the effect that indications of oil had been noticed from time to time and that the latest finds might make Sind one of the richest Indian provinces by virtue of the find of 'liquid gold' (oil). Other reports pointed to the possibility of oil near the Kirthar Range and Khairpur. It is said that official investigations considered these reports not only unjustifiably optimistic but exaggerated and therefore, no working on a large scale resulted. But nonetheless there is need for thorough and fresh investigations in this connection.

It is true that the search for oil in India is far from complete. During the war years only a certain amount of drilling was done under government control. This work was instrumental in bringing to light a new oil-field, which will be of great importance in the Punjab.¹ After drilling into an insignificant looking structure in the Siwalik rocks oil was encountered between 6,000 and 7,000 feet deep and appeared at the surface as a gusher yielding some 15,000 barrels a day of hot pitch-like oil, though unfortunately it hardened on cooling. Other similar geological structures are found in the same area and with luck should yield oil also. From other Punjab fields output continued to develop. In the search for more oil some success is likely on the frontiers of India, though Dr. Crookshank is afraid of some imaginary enemies taking possession of such fields in their advance. The latest discovery of oil was reported

¹ Summarised from Dr. Crookshank's Presidential Address at the Geology and Geography Section of the 33rd Indian Science Congress Session at Bangalore, January, 1946.

from the Kalat State in November 1946, where further investigation is underway.

(3) WATER POWER

The sources of energy can be divided primarily into two classes viz., accumulated, like coal, mineral oils, peat and natural gas etc, and those which are replenishable i.e. water falls, tides, wind and solar energy etc. And in our own time we are witnessing the birth of atomic energy with all its colossal possibilities. In the preceding pages the position and prospects of the Pakistan lands with regard to the two most important sources of accumulated energy have been discussed.

India is one of the leading countries awaiting the development of her resources of hydro electric power. Such development is a function of a complex of variants and variables: on the one hand of her physical build and its consequent advantage in respect of water power; and on the other of the enormous needs of the future. In the case of the Pakistan areas the need for this source of energy is even greater than it is in the rest of India. Fortunately, nature has not been stingy in providing these regions with a favourable geographical background. Among the relevant geographical factors are considerations of topography, rainfall and run off from catchment areas. In this connection the role of the Himalayan snowfields must be emphasized. Here snowfalls and glaciers and the melting of summer snows feed the streams tumbling down into the plains below. There is a prolonged wet season in the Assam hills and eastern Bengal with a

rainfall whose co-efficient of reliability is high.¹ This is due to heavy showers, to a long rainy season and to the fact that the rainfall is not entirely dependent on a single monsoon. Therefore, there are favourable sites in the hills for storage reservoirs. North of Muslim Bengal and Assam stretch the outer Himalaya through which the Teesta and the other rivers cut their way affording sites for dams and reservoirs in this rain soaked area. As has already been emphasized, boundary settlements must include this region within Pakistan in order to secure unified control of the sources of water in this area, because a continuous and unhindered supply of water is needed both for harnessing energy and for irrigation. In the North-West the melting Himalayan snows and the many small and big rivers winding their way on to the Punjab plains provide the necessary background for the harnessing of hydel power. Here also judicious boundary arrangements will guarantee a balanced and scientific utilization of water resources. The hills and streams of the northern part of the N.-W. F. Province too, have a physical background highly favourable to this purpose. Indeed, on an all-India basis, the potentially richest areas for water-power development are the Punjab, the U. P., Bombay, Bengal, Bihar and Assam; and the portions of the Pakistan lands out of these present provinces are said to have the greatest scope for probable minimum power.²

Now let us examine the present position with

¹ G. Kuriyan : *Hydro-electric Power in India—A Geographical Analysis*, p. 11.

² Meares : *Hydro-electric Survey of India, Triennial Report* p. 55.

regard to the relative production of power from coal and hydro-electricity. As has already been pointed out, 95 per cent of the known Indian Gondwana coal deposits are found in S. Bihar and western Bengal. Therefore the transport of coal over long distances places an enormous strain on the transport system. It is estimated that in normal times, nearly half the goods traffic on the Indian railways is in coal. At present, what is called the 'Energy Index' is very low in Pakistan areas. But it should be remembered that countries like Sweden or Switzerland, which have very little coal and oil have to depend on electrical power generated almost entirely from water. These countries have a high 'Energy Index.' But India's Index is low and it has been estimated that the progress so far achieved has covered less than a tenth of the definitely ascertained and practicable sources of hydro-electric power.¹

*Present Development :—*In the Punjab the biggest installation is known as the Mandi Scheme belonging to the government. The waters of the Uhl river, a tributary of the Beas, have been harnessed at a site on the spur of the Dauladhar Range in Mandi State, about 200 miles North-East of Lahore. The power station is located at Shanan near Jogindarnagar. The present power developed is 48,000 K.W.S. and ultimate capacity is 72,000 K.W.S. Sub-stations are at Kangra, Pathankot, Dhariwal, Amritsar and Lahore. The present load comprises the supply of energy to urban industries such as (1) the workshops of the N. W. Railway at Mughalpura near Lahore, (2) large spinning mills at Lyallpur, (3) small factories i.e. flour mills,

¹ The Location of Industry in India, p. 71.

hosiery and weaving plants. Bulk supplies are provided for Amritsar, Jullundur and Kapurthala State. The scheme serves an area of 46,000 square miles and a population of about $1\frac{1}{2}$ million. Possibilities of tube-well irrigation are being investigated and it is estimated that about $2\frac{1}{2}$ million acres of high lying ground could be economically irrigated by means of electric tube wells. Thus the water available would be practically equivalent to the addition of a sixth river to the Punjab.¹

In the N.-W. F. Province the waters of the Upper Swat Canal taken from the river at Aman Darra are led through a Benton tunnel for about $2\frac{1}{2}$ miles to the Mazah Khwar, the bed of which is followed for a short distance before the water is again taken into the canal for distribution to a large part of the province. The hydro-electric scheme takes about 1,000 cusecs of the power debouching from the Benton tunnel. This scheme, known as the Malakand Installation, was completed in 1938, and has a total installed capacity of 9,600 K.W. with an ultimate capacity of 20,000 K.W.

In Bengal and Assam hydro-electric development has suffered chiefly on account of the availability of plenty of coal in western Bengal and the entire electric power installed i.e. 372,500 K.W. is of thermal origin.

Possibilities of Development:—The least development has taken place in N.-E. India. The competition with cheap coal has so far adversely affected hydro-electric development. Very little survey work has been

¹ G. Kuriyan : *Hydro-electric Power in India*, pp. 44—47.

done. Even in 1921 Meares put the extent of possible development at 12.7 million K.W. According to the Bombay Plan the figure was raised to 27 million K.W. Much of Meares' work was based upon guess work, but so far only 1 per cent. of the figure he gave has been reached. One of the country's leading scientists observes,¹ "His (Meares') figure is most probably a glaring underestimation, for he was asked to do things hurriedly and had neither the time, nor the proper resources to make an accurate survey." He adds that this underestimation may be compared with the pre-Revolution estimates in Russia which gave the Russian figure for hydro-electric generable energy as 20 million K.W., but accurate Soviet surveys have revealed a potential of 280 million kilowatts. In 1913, in Russia, there was no electrical manufacturing industry worth mentioning; and what little there was, belonged to foreign capitalists. In 1920 the electrical output as a whole had fallen to $\frac{1}{4}$ of its former low level. In 10 years there appeared 30 new power stations with a total capacity of 1,500,000 KW. To-day even in the remotest Republics of Central Asia hydel power is harnessed on a large scale.²

Undoubtedly, planned electrification forms an indispensable element in the modern schemes of social and economic well-being and the leaders of Pakistan will do well to remember it. In the Pakistan of to-morrow with a wise industrial planning and dispersal of industry, especially in the vast markets of their densely

¹ Dr. M. N. Saha : India's Need for Power Development, Science and Culture, August 1944, p. 63.

² H. P. Vowels : Electrification in the U.S.S.R.—Science and Technology in the Soviet Union, p. 7.

populated parts, both in the north-west as well as the east; these potential sources of power which to-day only break rock and pebble beds will have to be utilised. For, looking at the geological picture of the Pakistan lands, both in the east, as well as the west, the generation of thermal electricity will not only be difficult but much costlier than hydel-power. No doubt, electric installations are a costly business and would, in addition, entail a great deal of accurate scientific effort. But when once set up and when its load is sufficiently increased, an electric scheme is cheaper to run than thermal plants.

NEW SCHEMES

The following is an account of some of the schemes under consideration in those parts of India which would lie in Pakistan and reference is also made to sites awaiting investigation. *The Punjab*—(1) the Dhiangarh dam about 750 feet high across the Chenab in Jammu State for generating upto 500,000 KW. (75 per cent load factor) of primary power, (2) The Mahru Tunnel scheme is linked to the Dhiangarh dam. A tunnel from Mahru (Chamba State) across the Pir Panjal Range, will run for about 5 miles to divert nearly 20,000 cubic feet of water per second from the Chenab to the Ravi. It is said that the potentialities of the scheme from the point of view of both irrigation and power development are great. (3) The Rasul Hydro-electric and tube-well scheme, utilizing the 80 feet fall from the upper Jhelum Canal into the Lower Jhelum Canal. About 1,000,000 kilowatt of primary power, besides a much greater amount of secondary power is

expected to be generated. Meares pointed out two possible projects in Kashmir, one on the Chenab river at Riasi and the other on the Jhelum near Muzaffarabad, both of these would really benefit the Punjab. The tardy development of water power in the Punjab so far, has not been determined by geographical limitations. This is shown by the fact that only $\frac{1}{3}$ of the possible development on the Jhelum installation has yet been put into operation and as much as 40 per cent of the installed capacity is awaiting demand.

But it must be added here that most of the water power is in the Himalayan area beyond the present boundaries of the Punjab. Thus frontier rectifications may be necessary with Kashmir state, if that predominantly Muslim populated state prefers to keep out of a possible 'Pakistan Federation.' In this manner many sites in the upper courses of the Jhelum, Chenab and the Ravi, apart from the Indus would come (as they must) within the North-Western Pakistan area. For, control of the waters of these rivers should not be the subject of periodical disputes.

N.W.F.P. :—It is interesting to note that this province has been associated in the English as well as the Indian mind with lawlessness, the ferocity of its people and its general uncivilized character. A classic example is found in the observations of J. W. Meares (who was to report on hydro-electric power possibilities and not to pronounce judgment on the economic future of the area!) when he said, "There has been no survey in the N. W. F. Province so far, and it is doubtful whether the cost of any such general survey would be

warranted. The area is largely wild and uncivilized, subject to frequent raids and lacks in present or prospective industries."¹ However, for the sake of completing the all-India picture some possibilities were mentioned by him: (1) the Indus at Kalabagh—where there is an enormous discharge, a minimum of 18,870 cusecs (2) the Kohat Toi, near Kohat, (3) The snow-fed Kunhar River which joins the Jhelum on its great bend below Muzaffarabad, on the Abbottabad—Kashmir road. (4) the Sinam River, a tributary of the Indus near Manshera. (5) the Upper Swat canal at Malakand (already developed into one of the great Indian projects).

Bengal:—Among the suggested sites, power from the Teesta Valley when it cuts through the outer Himalaya was included among the possible developments with nearly 500,000 KWS. This scheme is among those now being seriously investigated, according to Mr. Casey the former Governor of Bengal. Other suggested sites included the Tippera Hill Ranges and the Chittagong Hill Tracts with over 100" of rainfall. The Barkal rapids on the Karnaphuli river, about 45 miles up the port of Chittagong and 16 miles from Rangamati are said to have great possibilities. It is of interest to add that the Damodar, Barakar and the Usuri rivers were reported by Meares among the rejected sites with the remark, "All the three rivers named have been examined by the Irrigation Branch of the Bengal Public Works Department and found impracticable."² To-day the Damodar Valley with its schemes of power develop-

¹ Meares' 1919—21 Triennial Report, p. 156.

² Ibid., p. 163.

ment and the proposed dam and reservoir constructions bids fare to be the 'Tennessee Valley of India'!

Assam :—The possibilities of generating hydro-electric power were stressed both by Meares and Blenkinsop in their reports. The sites mentioned were the Mushami falls (near Cherrapunji), the falls in the Chandranath hill (between Lubha-Chhara and Jaintia), in the bed of the Lubha Chhara itself, or in the streams over which the Dwaki bridge is suspended. At Lubha Chhara in Sylhet the Surma river comes out of the hills and is joined by the Lubha. The catchment area is said to be 49 square miles with 200" of rainfall, so that the annual run off is enormous. The dam was proposed at Kuddum and the water was to be directed to Kannairghat. The whole area of the Khasi, Jaintia and Garo hills offers large possibilities which must be fully investigated. With possible developments, each of these projects would be capable of electrifying the surrounding country within a radius of a 100 miles. Especially fruitful will be the development of western Assam's water power resources which will bring large parts of central and Eastern Bengal (Mymensingh and Dacca districts) and Cachar and Sylhet districts in Assam, within practical transmission distance. The whole of this region is a compact Muslim area with a dense population (some of the highest averages in the world) and rich agricultural resources. The minimum estimates¹ put the possible power development at 300,000 KWS.

Reference may also be made to some other forms

¹ Meares' 1919—21 Triennial Report, p. 163.

of energy i.e. harnessing sunlight and wind-power¹ which may be developed in the future and are to-day regarded within the realm of practical possibility. Muslims knew the use of wind power long before the age of steam and passed it on ultimately to western Europe. The famous traveller-geographer Masudi (10th century) mentions it in connection with Sistan and Kirman in his famous book, 'Meadows of Gold and Mines of Precious Stones'. Recently, H. Honnef of Heidelberg suggested the possibility of harnessing wind power at a ridiculously low cost. The disadvantage of non-constancy of wind and its direction is overcome by removing power plants to heights where wind power becomes remarkably uniform, in fact, even more uniform than water power at the existing hydraulic stations. Details of this method were worked out for all parts of Germany before the conclusion of the last war. For harnessing sunlight Dr. Bruno Lange of Dahlem is said to have discovered a practical method.

¹ See Kuriyan : Hydro-electric power in India, Op. Cit., pp. 4-5.

Chapter VII

AGRICULTURE

The areas which would constitute the Pakistan lands have been overwhelmingly agricultural for centuries. In spite of the recent spread of modern industry to some parts of the country, these Muslim areas have so far been affected only in a limited manner. For instance, in spite of the expansion of industry in a part of Western Bengal (mostly in the environs of greater Calcutta) the percentage of total population depending on industrial employment for its livelihood is decreasing.¹ No less than 9/10 of the population of Bengal lives in villages; and similarly in the North Western Zone the rural population is enormous. Though by virtue of different geographic personalities, climatic aspects, and socio-economic development, the character of agriculture is at variance in the two Pakistan Zones, yet in both many old practices have survived to the present day.

Over large parts of India in general and the N.-W. Pakistan areas in particular the march of the seasons plays an important role in agricultural production. 'Bad season' or 'Good season', mostly in the sense of a satisfactory monsoon or otherwise, overwhelmingly

¹ Famine Inquiry Commission Report on Bengal, 1945, p. 5.

affect both acreage and production. The development of irrigation has not made these regions 'safe' against the vagaries and eccentricities of the monsoon; hence there are substantial fluctuations in yield from year to year. Rainfall is more plentiful in the Eastern Zone; but here floods and stagnant river channels and the spread of malaria seriously affect agricultural production.

In assessing the agricultural resources of the Pakistan lands an attempt has been made to answer the following questions. First, what is the position with regard to the actual production of certain important food and cash crops? Secondly, what are the most noticeable trends and tendencies? And finally, what are the problems which have to be faced, and what are the possibilities of development?

It is not the purpose of the present inquiry to discuss the extent and scope of economic and social reform which may be necessary to bring about desired changes. Such reform would depend upon the political and state programmes¹ of the leaders of the Pakistan lands to fulfill the urgent needs of the people and secure a future of well being and prosperity for the millions who inhabit these regions. What has been attempted here is to reveal the inherent advantages in agricultural production that

¹ Even the present Government of India estimates that their countrywide schemes would cost Rs. 1 crores (10,000,000) of capital expenditure and an increase of 100 per cent in production will be achieved in 15 years and 50 per cent in 10 years. See Memorandum on the Development of Agriculture and Animal husbandry in India, 1944, p. 10.

these regions possess by virtue of their geographic personality.

Production of food crops :— Cereals are the basic food of the Indian people, and more than ever the food situation during the last year emphasised their importance. The latest Famine Inquiry Commission, in their final report¹ reached the conclusion that before the war India was not self sufficient in food grains, though there was a small exportable surplus of wheat (200,000 tons). There were however large imports of rice (about 1,750,000 tons.² What does this reveal with regard to the food resources of the Pakistan lands? Throughout the war years Sind remained a surplus province and in 1942-43 the exportable surplus amounted to about 30 per cent of the provincial yield of food grains.³ The same was the case with the Punjab as a whole, which is normally a large exporter of cereals. These exports consist chiefly of wheat, but also include rice, millets and barley. The Punjab's wheat surplus is considerable i.e. 2,500,000 tons, and her rice production is 299,000 tons giving only a deficit of 19,000 tons (the smallest deficit of any Indian province).⁴ The North Western Frontier Province needs small imports at times, as normally it is slightly in deficit. It imports about 25,000 tons of wheat and 8,000 tons of rice and exports nearly 15,000 tons of barley. There was no shortage⁵ in 1943. The wheat production figures in the

¹ Report, p. 58.

² Ibid., p. 114.

³ Ibid., p. 4.

⁴ R. Mukherji: Food Supply (Oxford Pamphlet No. 8), p. 27.

⁵ Famine Report, p. 4.

Punjab, district wise, reveal the more satisfactory position and the self-sufficient nature of the N.-W. Pakistan area than other parts of India. In the east, Bengal was the main sufferer in matters of food supply. In fact, here food scarcity was nothing but rice scarcity as this part of India is singularly dependent on this grain. It is, though, normally deficit both in rice and wheat. The average annual net imports of rice according to the previous five years recorded statistics ending 1941-42 were approximately 132,000 tons. The average annual net imports of wheat for the same period were 249,000 tons.¹ In general, the whole province in normal condition imports about 5,00,000 tons of rice, 220,000 tons of wheat and only 38,000 tons of gram. Even during war time by a restriction of the jute grown in the province, the rice deficit was converted into a surplus of over 1 million tons.² The average production of rice in Bengal is 8.2 million tons which is nearly sufficient for its needs. Bengal has been known as one of the granaries of India throughout the past; and the great famine of 1943 is explained not so much by the incapacity of the land to produce, as by acute psychological factors which were the consequence of the war and the military situation, resulting in stoppage of imports from Burma, heavy burden on transport lines, increased consumption and in addition by shameful hoarding and profiteering.

Eastern Bengal the nucleus of the Eastern Pakistan zone is a great rice producing area (see map No. 5) and the North-Western Muslim zone, in general, has a more satisfactory position with regard to food resources.

¹ Famine Report, p. 8.

² R. Mukherji: Food Supply (Oxford Pamphlet No. 8), p. 27.

This is said by no means to engender among the supporters of Pakistan a feeling of complacency. In fact, with their growing population and expanding consumption, a vigilant effort will be demanded to enable the millions of mouths to be fed properly.

Let us now examine the position of Pakistan lands with regard to the conditions of the production of some of the most important agricultural crops, i.e. rice, wheat, some inferior cereals, cotton, jute, and sugar-cane etc.

W H E A T

Wheat is the principal Rabi (winter crop) crop all over N.-W. Pakistan lands. In the Punjab it has an acreage much in excess of any other crop. It is the mainstay of the province's agriculture and apart from being the staple food, constitutes the main cash crop. But its distribution, though wide-spread over the province, reveals some interesting features in relation to the possible Pakistan boundaries. The area of heaviest concentration lies roughly within a "V" shaped region, the western arm of which runs along the outer boundaries of the Mazaffargarh, Mianwali and Attock districts and the eastern, east of Multan, Montgomery, Lahore, Amritsar and Gurdaspur districts. The only other area of heavy production is found in the Feroz pore, Ludhiana and Jullunder districts. The Ambala division, as a whole, is of less importance, producing only a small proportion of the Punjab wheat. This shows that most of the Punjab wheat production lies well within the Pakistan region.

There are several geographical factors which influence this distribution. (1) In these areas the water supply is more assured, both through the agency of the winter rains as well as by the development of canal and well irrigation. These are the inter riverine lands between the Sutlej and the Indus and crossed by the rest of the important rivers of the Indus system i.e. Jhelum, Chenab, Ravi etc. In fact, irrigation plays the major role in wheat cultivation, as more than half the crop in the Punjab is grown under these conditions. Wheats dependent on rainfall have lower yields. The Punjab provides an example of both kinds. 'Barani' wheat (dependent on summer rain) gives an yield of only 560 to 800 lb. Some parts exhibit much higher yields¹ e.g. Khanewal in 1935 got 2,000 lbs. and in the Montgomery district on the well managed Coleyana estate an overage of 1,600 lb. has been obtained for the last 20 years. The 'barani' lands under wheat are more extensive in the east and some of the submontane tracts. (2) Vast stretches of these tracts are covered with river-built loam which gives high yields when supplied with sufficient water. Wheat does best in medium loamy soils. The 'rasuli' and 'rohi' which consist of light clays and medium sands are good wheat soils and the heavy 'hara' soils have also been found satisfactory.² (3) In spite of the organisation of water supply, climate plays an important role in wheat cultivation. Irregularity of rainfall, its variation, and its maldistribution from season to season; the absence of sufficiently low temperatures in December and January, and the lack

¹ Dr. Burns: *Technological Possibilities of Agricultural Development in India*, p. 57.

² K. S. Ahmad: *Production and Distribution of wheat in the Punjab*. The Calcutta Geographical Review, Vol. IV, No. 2, p. 130.

of a cool moist season at the time of germination and growth, greatly effect yields.¹

In the Punjab wheat breeding has been carried on for a long time and the general purposes wheat called 8A is widely cultivated. Of the good newer wheats there are C517, C519 and 9D. They generally give higher yields than the locals. Degenerate and poor yielding wheats are cultivated on the terraced fields of the Punjab foothills.

Sind is also one of the leading surplus wheat areas, her production being 417,000 tons giving her a surplus of 136,000 tons. She also produces 292,000 tons of rice with a 60,000 tons surplus. Along with the Punjab, Sind was the leading wheat exporting area during war time.

In Sind irrigated wheat gives an average yield of about 800 lbs. only. This figure is below that of the Punjab yields. These poor results are due to excessive rust, to the short winter, to the high humidity during maturation and to indifferent farming. The application of sulphate of amonia gave good results on lighter and non-saline soils.

Throughout the war Sind was exporting food stuffs to different areas. It is estimated that such exports meant an increase in the revenues of the province to the tune of nearly Rs. 4 crores (40,000,000) in the last two years alone. It is reported² that Sind is to continue to supply every year nearly 200,000 tons of rice and

¹ K. S. Ahmad: The Calcutta Geog., Review, Vol. IV, No. 2, p. 130.

² The Calcutta 'Statesman', 16-11-45.

and 150,000 tons of wheat to deficit areas in South India

It is contended¹ that had it not been for the short sighted policy of the provincial Agriculture Department in encouraging cotton cultivation at the cost of food crops, Sind would have grown cereals in still larger quantities and relieved the recent all India food shortage to an even greater extent.

R I C E

Rice is the most important food grain in India and its production and cultivation is of special significance to the peoples of Pakistan as it is not only the sole staple food of the eastern zone but forms an important part of the diet in the west. The size of the Bengal rice crop is enormous. It is estimated that the Indian production is almost equal to the combined aggregate production of all other countries in the world, excluding China and Burma and Bengal produces one fourth of the Indian yield, and out of this the Muslim zone produces approximately 7,000,000 tons i.e. about 77 per cent.

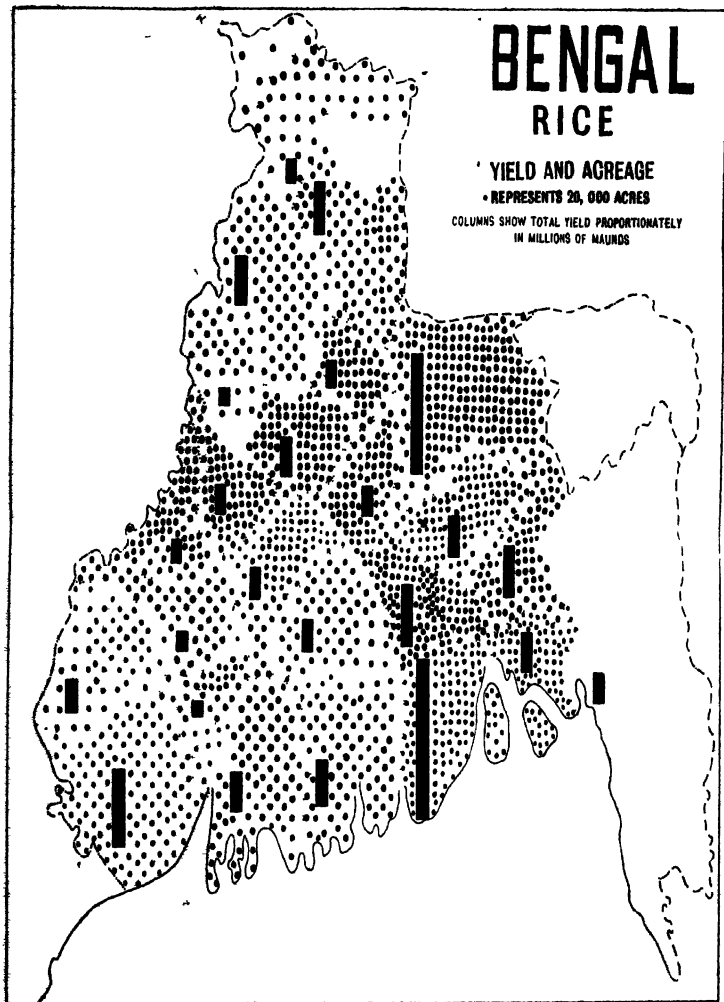
¹ Pithawalla and Raisinghani: The Problem of Population and Food Planning in Sind, the Calcutta Geographical Review, Vol. II, Nos. 2 & 3, p. 51.

BENGAL RICE

YIELD AND ACREAGE

• REPRESENTS 20,000 ACRES

COLUMNS SHOW TOTAL YIELD PROPORTIONATELY
IN MILLIONS OF MAUNDS



MAP NO.5.

Production in millions of tons (approximately)

1939

Burma	...	...	...	8,000,000
N.-E. Indies	...	...	...	6,000,000
Indo-China	...	...	...	7,000,000
Japan	...	...	...	12,000,000
Phillipines	...	...	...	2,000,000
Siam	...	...	...	4,000,000
Korea	...	...	...	4,000,000

But with the help of irrigation Sind and the Punjab in the N. W. zone are important producers.

Rice must be grown in mud and water, and unless it is transplanted the grain will be coarse. The roots of the plant must continually be fed by the ingress and egress of silt laden water. In the Bengal delta (mostly lying in Eastern Pakistan) the annual flood or flush irrigation during the rainy season when the whole country appears to be almost submerged, is the mainstay of rice culture. When the rivers are in flood, water from the bigger streams passes into numerous streamlets, (known as 'khals') which wind through rice fields in the interior of the country. After the rains the current is reversed; and water from the interior of the country pours through the various tributaries and streams into the main river. And the 'khals' thus act as discharge channels through which the immense volume of water contained by the spill-basins during the flood ultimately passes into the river, after having deposited its silt and fertilised large stretches of land.¹

¹ R. Mukherji: *The Changing Face of Bengal*, p. 46.

In the great rice lands of Eastern Pakistan, three rice crops are grown during the course of the year. Winter rice is known as the 'aman' crop and is by far the most important source of food. It consists of mainly, what may be called lowland rices which are sown in May and June and mature in November and December. It yields the finest grain, but needs an abundant water supply. It is the most important crop of East Bengal. Indeed, it is pointed out that agricultural security, and density of rural population in Bengal generally increases with an increase in the percentage of 'aman' rice. The thickly populated districts of Eastern Bengal devote 63 to 90 per cent of their net cropped area to this crop.¹ The autumn crop known as the 'aus' ranks next in importance. It consists of mostly highland types sown in April or thereabouts, and harvested in August and September. Another rice crop of comparatively minor importance is also grown in between the 'aman' and the 'aus'. This is called the 'boro' and is sown in November and harvested in February or March. Due to a high rainfall, irrigation plays a small part in the cultivation of rice, especially in eastern Bengal. It is estimated that only about 7 per cent of the total area under rice is irrigated; the remainder is dependent entirely on rain. But over large tracts of western and Central Bengal, it is increasingly felt that the aid of irrigation due to the unequal behaviour of the monsoon from season to season, must be resorted to.

The present yields vary throughout the Indian provinces but they can be pushed up higher by (1) the use of high yielding varieties of seed, (2) careful appli-

¹ R. Mukherji: *The Changing Face of Bengal*, p. 51.

cation of water and manure and (3) the use of fertilizers (which will be cheap relatively to the value of the increased produce). Rice needs phosphorus as well as nitrogen and an increasing use of bone meal is suggested. Experiments carried out in Bengal between 1936-39 by the use of the sulphate of ammonia have resulted on the average at 50 per cent profit on the fertilizer expenditure.¹ But regional, climatic and geographical conditions will have to be taken into consideration in the application of manures. Eradication of insect pests and the improvement of water supply (in parts of Bengal, river water can be pumped up and canals will prove useful in western and N.-W. Bengal; and in the N.-W. Pakistan area extension of canals and the sinking of tube wells bear good results) will lead to increased production.

In general, the area under rice has increased during the war. In the Eastern Pakistan area this has been mainly due to two factors:² first, a decrease in the area under jute and a corresponding increase in the area under rice; and Secondly, the bringing of marginal lands under rice cultivation owing to the high prices that rice commanded. The first factor is likely to cease operating altogether, and to have much less influence than formerly, now that the war is over. The extent to which the second will continue to operate will depend upon the level of rice prices. But the extent of the marginal lands being small, in any case it will mean

¹ Dr. Burns: *Technological Possibilities of Agricultural Development in India*, pp. 52—53. With the use of various kinds of manures i.e. oil cake, bone meal, sulphate of ammonia, compost and green manure, Dr. Burns estimates a 20 per cent increase in rice outturn.

² Famine Inquiry Commission Final Report, p. 115.

only a small increase in post-war production. For Sind however, it is estimated that the construction of the two additional barrages on the Indus will roughly lead to an increase in rice production by 400,000 to 500,000 tons.¹

SOME INFERIOR GRAINS

Jowar & Bajra:—Are inferior grains, but over large parts of India they remain the staple food of millions of poor. In many cases the mixing of these cereals with superior kinds is resorted to. They are of importance to the N. W. Pakistan lands, for, apart from addition to human food they constitute a valuable green fodder for cattle. Jowar stalks can be utilized either by feeding green or being put into silo pits. It makes admirable silage. 'Kadbi' or 'Kutti' (chaff) is most economically used when put through a chaff cutter. This practice is universal in the Punjab. Another advantage is that this chaff can be baled and kept as a fodder reserve especially to cover the danger of years of scarcity.

Both are dry region crops suited to the natural conditions of a large part of the north west, where they are grown on areas of inferior soil and poorer water supply. But bajra occupies tracts of still poorer soil and less certain rainfall. Yields are generally low but irrigation wherever possible increases production remarkably well. In recent years jowar acreage has shown expansion but this has not been reflected in yields. With bajra increase has been achieved in both acreage and yield.

¹ Famine Inquiry Commission Final Report, p. 116.

Maize:—Is of considerable importance in N.-W. Pakistan as a food and fodder crop. It is especially important along the lower slopes of the Himalaya where it is grown as a rainy reason (kharif) crop in rotation with wheat as a winter crop. Maize is a quick-growing crop, and when raised under favourable conditions, gives a heavy yield of food grain per acre upto 3,000 lb. It is also another valuable green fooder. Inferior qualities can be replaced by American varieties and experiments should be made with hybrid maize as has been done in the U.S.A. in recent years.

Of late, maize has figured prominently as a source of starch and even of glucose. Industrially, many table delicacies may also be prepared from the grain. Though the present yields are low, it is suggested by Dr. Burns that they can be raised to a 1,000 lb. per acre by compost manuring and the use of better seed.

The position in respect of inferior cereals i.e. jowar, bajra, maize and gram etc. in the North-Western area is better than many parts of India. By virtue of its being a multi-crop area, and because of foreseeable future adjustments and the need for a mixed dietry, the demands of population increases would be met. Thus, with regard to food supply in general, the position in the Muslim zones is satisfactory; in fact, these may be regarded as surplus regions. Their favourable geographical advantages and the careful planning which would be devoted to them, engender a sense of security for the future and will provide an appreciable export surplus.

SUGAR CANE

The sugar cane cultivation area of the Pakistan lands is a part of the belt which stretches across the Indo Gangetic alluvium from northern and western Bengal to the Peshawar Valley. Here heavy rich alluvial soils with moderate rainfall are suitable to cane growth. But the extremes of temperature are not favourable. Irrigation in regions of moderate rain brings about an enormous change in production. Sugar cane has been grown over these plains for centuries, but a great increase in cultivation was not dependent upon facilities of irrigation alone, in fact, a powerful stimulus to cane cultivation came with the imposition of the tariff in 1932. Research and experimentation at Coimbatore dating from 1913 also bore fruits, as developing and testing of varieties for all parts of the country was undertaken. As a consequence, 75 per cent of the total Indian area under cane is covered with improved varieties. Percentages of improved crop to total crop by provinces upto 1933-34 were as follows.¹ U. P. (90.5), Punjab 38.5), Madras (41.9), Bombay (13.3), Bengal (61.8), Bihar and Orissa (80.6), Mysore (45) and Assam (28.4).

The Punjab ranks third among the provinces of India as a producer of sugar cane, though her proportion to the U. P. output is nearly one third. The chief sugar cane tracts of the Punjab are the districts of Montgomery, Lyallpur, Sialkot, Amritsar, Lahore, Jullunder and Rohtak, i.e. the majority lying within

¹ G. Kuriyan : Sugar Cane cultivation in India, The Journal of the Madras Geographical Association, July-Sept., 1940, p. 207.

the Pakistan zone. Bengal also is a large producer though the quality of the cane is poorer due to greater humidity. The main producing districts are Dinajpur, Rangpur, Bogra, Dacca, Mymensingh, Nadia (all Muslim majority districts) Birbhum and Burdwan.

Figures of Sugar Cane Production (1939-40) in tons.

N.-W. Pakistan	...	...	344,000	
N. E. Pakistan	...	...	407,000	
Hindustan	{	U. P.	...	2,129,000
		Bihar	...	460,000
		Bombay	...	214,000
		(Madras)	...	380,000

The role of irrigation in sugar cane production has been decisive, especially the far reaching effect on yield brought about by tube well irrigation in the central and western U. P. Therefore, a scheme of proposed tube wells in the Punjab worked by hydro-electric power would increase the sugar cane production. Secondly, the methods of manuring and the kinds of manure are an important question. It is estimated, that as a result in the Punjab the yields can be raised from 40-45 per cent and in Bengal 35-40 per cent per acre. According to an expert, sugar cane is likely to benefit by the application of ammonium sulphate on the Punjab soils. If ammonium sulphate could sell at Rs. 5/- per maund, it will considerably improve the sugar cane cultivation of the Punjab.¹ The prevention of diseases and insect pests (like the serious menace in the Punjab in 1934) especially the borer, dusting with Cryolite with power dusting machines, as is done in the U.S.A. will certain

¹ B. C. Battya, in the Uhl river Hydro-electric Project, Final General Report, p. 27.

ly bear fruitful results. In fact, what is needed is long term planning in cultivation, with due regard to irrigation, soil distribution, rotation and markets.

COTTON

Among the non-food crops cotton is most widespread over areas very different in soil and climate in the N.-W. Pakistan zone. Numerous varieties are grown; and in the Punjab the improvement of both American and 'desi' varieties has been steady. The chief long staples are 289 F/K 25 and 289/43 and the 'desi' jubilee cotton. Both the Punjab and Sind have had an admirable reputation for their American cottons. But the mixing which was resorted to for the Japanese market dimmed these reputations. In both these provinces the crop is subject to 'tirak' (at an interval of an year or two there is a poor crop). Its occurrence is found to be connected with soil conditions. But now as a result of experiments it has been found that alterations in the sowing period, application of heavy irrigation at shorter intervals as well as the use of nitrogen and sulphate of ammonia is capable of redressing the situation.¹

With regard to the prospect of increase in yields may be pointed out the use of improved varieties, rotation with other crops and the application of both organic and artificial manuring. Two important outlets for cotton production will be the utilization of cotton seed and the use of cotton fabric in new ways. Cotton will play an increasingly important role in the economy of

¹ Dr. Burns' Note, p. 87

the N.-W. Pakistan lands. The more widespread growth of long staple varieties will provide the surplus for the purchase of capital goods which will be needed for schemes of material development. The home utilization of the raw material in the growing textile industry also should not be overlooked.

The production figures are as follows :—

(Bales of 400 lbs. each)

Punjab	...	...	...	1,140,000
N.-W. F. Province	...	...	...	4,000
Sind	...	...	..	354,000
Bengal	...	...	...	26,000
All India	...	...	...	4,909,000

J U T E

This is one of the most important fibre crops in the world. Of it India has the monopoly and in the country it is Bengal which occupies the premier position. Moreover it is the Eastern Pakistan zone which has within its territories not only the best but also the greatest jute growing area. The fibre has been able to hold its own not only for its present multifarious uses, essentially due to its strength and cheapness, which make it difficult for its substitutes to compete with it. Muslim Bengal's position in relation to all-India production is

brought out by the following table, using 1942-43 figures :

	Acres	Tons
Muslim Bengal	2,135,900	1,269,200
Sylhet Dist. of Assam	37,152	23,220
Assam	284,400	168,215
Rest of Bengal	30,000	23,940
Bihar	232,900	101,965
Orissa	23,500	11,071
U. P.	10,000	—
Total	3,306,755	2,210,893

Localities and seasons profoundly influence the quality of the fibre. Season also affects retting—abundant water leads to cleanliness of the fibre. More sunny days are needed for drying the fibre properly and this gives it lusture and strength. The best jute fibre is obtainable from loamy soils, clayey soil gives the heaviest yield, but the plants do not ret uniformly. Sandy soils produce coarse fibre. Therefore, more research on soil effects is needed. In future higher yields from regions of superior quality will be needed, for many acres will be taken up for the production of food crops. At present, generally, the yield for Bengal is 15 maunds to the acre but with manuring it can be raised to 20. Thus, increase of yield will release much useful land for food production.

LIVESTOCK PRODUCTION

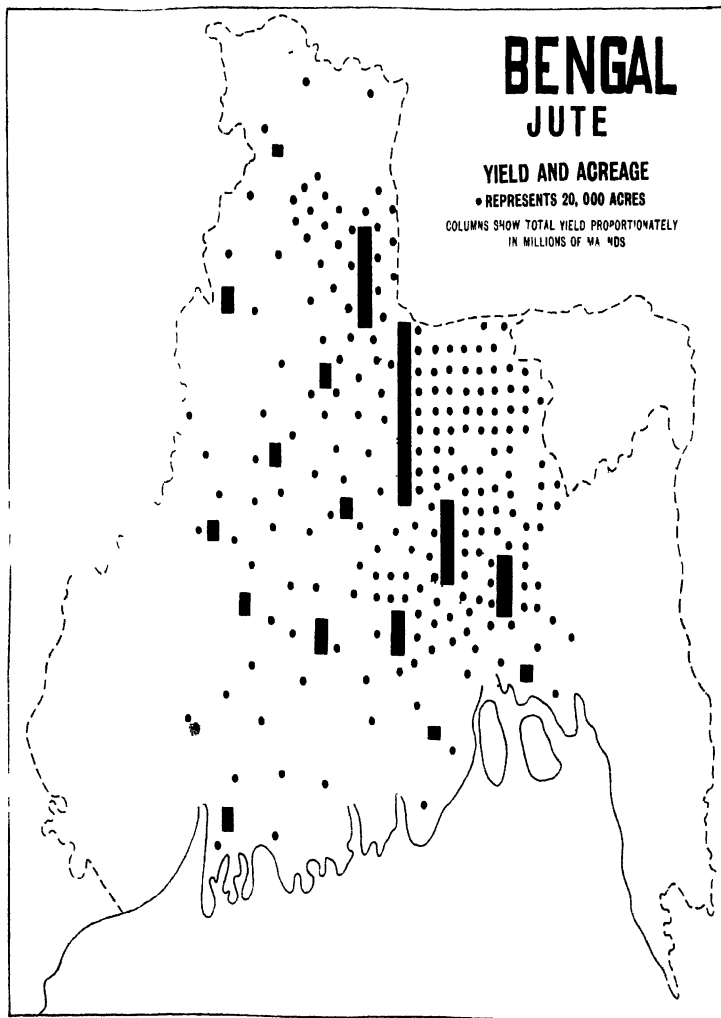
The position with regard to livestock may also be stated briefly. India has the largest number of livestock in the world. The total number of animals in

BENGAL JUTE

YIELD AND ACREAGE

• REPRESENTS 20,000 ACRES

COLUMNS SHOW TOTAL YIELD PROPORTIONATELY
IN MILLIONS OF MAHDS



MAP NO. 6.

British India and Muslim Bengal and the N.-W. zone is as follow :

	British India	North-West Zone	Muslim Bengal
Cattle	37,273,105	9,855,791	19,215,499
Buffaloes	15,045,836	5,876,208	845,702
Goats	37,686,059	3,293,827	4,282,952
Sheep	47,932,527	4,913,102	349,086

Distribution is mainly dependent on a climatic basis. Dr. Burns makes a threefold division, (1) Areas of 70 to 100 inches rainfall (2) 30 to 60 inches (3) Those having less than 30 inches. All authorities emphasise, however, the handicap of imperfect censuses. An estimate of milk production (cows and buffaloes included) reveals that in the dry region, much of which constitutes the N.-W. Pakistan region, it is the largest i.e. on an all-India basis $2\frac{1}{2}$ times that of the wet regions. The North-Western area, particularly the Punjab is the chief buffalo region and therefore, able to produce the greatest quantity of milk. In fact all over the North-West there is a much larger milk content in animals, whether cattle, buffaloes or goats. These areas are also the most important sources of Indian white wool, in which it is expected that improvements will produce a 100 per cent increase.

However, in the heavy-rain areas of the Eastern Pakistan, the animals though large in number, are weak and under-developed and produce very little milk.

Both the eastern and western Punjab figure as an area of the export of milch cattle, and the animals are

in great demand throughout northern India. Sind is also another exporting region. The famous red Sindhi cow like her sister in England and Denmark is considered the best dairy animal and is noted for being a light eater and easily adapts herself to any climate. Sind has enjoyed a considerable export trade in cattle both in and outside India, Sindhi cattle being taken as far as Gibraltar in the west and Singapore in the east. It is reported that the Agriculture Department of Sind has already submitted to the Government of India a scheme for cattle development at an estimated cost of Rs. 2,25,000.

The largest number of sheep are in the North West. They are generally owned by the nomads who wander over the region seasonally. Plentiful raw material is available, but is of doubtful quality. The woollen industry, both in the cottage as well as the large scale stage, is going to play an important part in the economics of N.-W. Pakistan; it is desirable, therefore, that there be selective breeding, attention to diseases, proper feeding and above all efficient management. It is expected that the improvements will be rapid. Sheep breeding should not wholly remain in the hands of the nomads, especially in the Punjab; zamindars of the 'barani' areas should own flocks. Attention should likewise be devoted to better breeding of horses and goats.

It is unanimously believed that much improvement can be effected in the livestock of the country; though it is rightly pointed out that this is not an end in itself. The improvement of cattle strains is the means for securing more output from the animals and greater income.

from their products. The economics of livestock development, therefore, must be the guide.¹

The technical problems of improvement resolve themselves into those of feeding, breeding, management and control of disease. Cattle feed consists of roughages and concentrates. The former include fodder crops, the stalks of cultivated crops and the grasses. The latter include oilcakes, cotton seed, gram, cereal husks and bran. Among the roughages the Eastern Zone is rich in grass, while in the north west, rainfall being seasonal and amounts of rain small, grass is available only for a few months in the year. There silage making is of paramount importance, as has already been remarked. But in the west a plan of improvement should envisage a study of all grazing areas of large dimensions; and especially in the sub-montane tracts of the Punjab the disastrous effects of soil erosion, as a result of indiscriminate grazing, must also receive attention.

The increase of the production of concentrates is also advocated with special reference to the oil seeds. This must form an integral part of any agricultural plan for improvement.²

Fruit Culture:—Production of better quality fruit on a large scale is yet another direction in which the N.-W. Pakistan lands hold out enormous promise. By climate and topography the region is suited to the production of the fruits usually grown in temperate lands. Wherever better methods of growing and finer quality

¹ Memorandum on the Development of Agriculture and Animal Husbandry in India, p 42.

² *Ibid.*, pp. 43—44.

strains have been tried, results have been encouraging. Therefore, it will be necessary to survey the whole field of fruit development with considerable care. Not only can thousands of people benefit from the making of local products like jam, jellies, juices and chutnies in a more careful manner, but large scale fruit-preservation and canning industries can be established as well¹ creating employment and a surplus of finished articles for export. The geographical basis for an enormous increase of fruit production exists in the submontane regions of the Punjab and the N.-W. F. Province.

SOME PROBLEMS AND POSSIBILITIES

Over large parts of Pakistan lands the fate of agriculture is closely linked with the vagaries, eccentricities and the unequal distribution of the monsoon rains. Areas like the highly irrigated lands of Sind and the Punjab and even the rain soaked Bengal have to reckon with its unequal distribution from year to year. The evils of soil erosion are visible in the North-West as well as the North East. Among the human factors, apart from minor differences, Pakistan lands as well as the rest of the country have problems connected with the fragmentation of holdings, poor manuring, inferior seed, use of the ancient wooden plough, pests and diseases, and, above all, chronic indebtedness. As has been seen above, the livestock position in the north-west is the best in the country;; but even here inadequate feeding, indiscriminate breeding and poor management reduce the advantages of a rich source of wealth. And

¹ See *infra* Chap. VIII, Industrial Development.

in the north-east the present conditions have been revealed to be deplorably low.

In consideration of the prevalent unsatisfactory conditions, improvement may be sought along the following lines. The application of scientific and technological knowledge, keeping in view the geographical personality of these regions may produce results so far undreamt of. All that is needed is imagination and a will—through the organised efforts of the community—to bring about the needed change. In other parts of the world, after all, equal if not greater drawbacks of nature have been overcome. Therefore, taking into account both the human and environmental circumstances of these regions, the water and the land resources should first be developed and properly utilized. There being two outstanding problems in connection with the conservation, of land i.e. prevention of erosion and the return to the soil of those elements essential for plant life (proper manuring both green and artificial). A more equitable redistribution of land among the cultivating classes, both in the North-West as well as the North East is essential. The organisation of proper irrigation facilities is no less important. Secondly, scientific farming with improvement of seed and the rotation of crops is most desirable. The utilization of machines wherever practicable must also be advocated. For, on the firm foundations of ably cultivated fertile land will depend the welfare of the Pakistan communities. All agriculture and population statistics of India point to the fact that without a planned improvement of agriculture the present hiatus between increase of population and the food supply will be enlarged, as in many parts of the country the rate

of the increase of total food production is being increasingly outrun by the rate of population increase. Though in the Pakistan lands the situation is comparatively better, yet a vast human effort is needed; and some of it may be referred to here.

Irrigation :--It must be recognised that the organisation of water supply for irrigation in its widest sense is the most potent means of increasing agricultural output in the Pakistan lands. Irrigation canals, multi-purpose reservoirs, tube wells, river pumping, open wells, all should be developed to the utmost if agricultural production is to keep pace with the growth of population.

In this connection mention should be made of some problems that are being met with in the canal irrigation of the Punjab. It appears that canals are not an unmixed blessing in this area and constant human vigilance is necessary to fight against nature's course. Water-logging in the irrigated areas of the Punjab has assumed serious proportions. This is due to the rise of the water-table; and the harmful effects of this appear in two forms.¹ First, there occurs a saturation of the soil, locally known as 'sem,' sometimes also leading to the formation of 'jheels' (extensive ponds); and secondly, concentration of salts in the upper layers of the soil takes place and is known as 'thur.' The extent of the damage from 18 districts of the province is reported to have increased from 457,258 acres in 1937 to 1,429,371 acres in 1944. Experience has shown that the effective remedy lies in bringing down the water table by lining the irrigation channels and by

¹ Famine Inquiry Commission Final Report, p. 133.

providing tube wells.¹ As a result, the Punjab government are said to have under consideration a large scheme of tube well development along the perennial channels of the Chaj and Rechna Doabs. The Rasul Hydel Tube Well Project will cost about Rs. 7 crores to work 1,800 gigantic tube wells.

At the turn of the last century, when most of the Punjab canals were constructed, land was judged by its face value. Vast thick forests testified to its fertility. The sub-soil water table was deep. At that time the need for an analytical survey of the soil texture was not felt.

The reason why the earlier settlers had confined their settlements to the submontane tracts only was not paid attention to. Now in view of the extension of large scale perennial irrigation to Sind such possibilities with regard to the changes in water table must be fully investigated.

Even in the much more moist Eastern Pakistan area the need for irrigation and flushing the channels of the moribund rivers is being felt, especially in Central and Western Bengal. These areas no longer receive the fertilizing silt from the large rivers which formerly flowed through them; and in consequence the fertility of the soil is deteriorating and malaria is becoming more prevalent. It has been pointed out that the system of overflow irrigation in Bengal goes back 3,000 years.² The canals were broad, rich in fine clay

¹ The Calcutta "Statesman," 5-11-45 (quoting from the official Report).

² Sir W. Willcocks: Ancient System of Irrigation in Bengal, p. 3-5.

and free from coarse sand. They were long and continuous and fairly parallel to each other and the irrigation was performed by cuts in the banks of the canals. The ancient irrigation combated malaria, provided an abundant harvest of fish, enriched the soil and made congestion of the rivers impossible. The importance of the perennially swamped areas and 'bils' was great and it is suggested that the drying up of these and the destruction of the fish in them, increased malaria. "Rice lands alternately under water and dry, in which fish and shrimps are killed off are the allies of the mosquito."¹ Sir, W. Willcocks, who studied these problems, says that in central Bengal, especially in the Murshidabad and Nadia districts there exist so many canals on the ground in a workable condition, the expenditure in restoring them would not be very great. In the Khulna and Jessore districts the canals have been left very much alone.² Therefore, it will be necessary to investigate fully the lay out of the past irrigation works and judge of their utility in the changed circumstances of our own times. As regards East Bengal, the major improvement consists in the possibility of reviving the old channel of the Brahmaputra river which passes through the Mymensingh and Dacca districts, but which is now 'dead' in winter. The two principal sources of Water are the Ganges and the Teesta. In view of this the possibility of constructing a dam across the Teesta in its relatively narrow gorge in the Himalaya, before it flows into the Bengal plains was suggested in December, 1945 by Mr. Casey the former Governor of Bengal. But that such gigantic schemes have to be evolved in careful con-

¹ Sir W. Willcocks: *Ancient System of Irrigation in Bengal*, p. 92.

² *Ibid.*, p. 111.

sideration of the geological and geographical circumstances of particular areas was suggested by the observation of Sir J. A. S. Williamson former builder of the Dooars Railway, in a recent letter from London.¹ It was pointed out that deep under the overlying alluvial deposits, where the Himalayan and the more ancient Peninsular geological formations abut, there runs a great fault or weak line in the earth's crust, extending through Assam, the Dooars, and westward along the Tarai belt; this is the source of frequent destructive earthquakes. Further the geological formations of the Lower Himalaya, through which the Teesta debouches, are greatly distorted and do not offer suitable sites for the construction of a great dam.

Lastly, growing progressive opinion takes the view that the mere fact that some canals and irrigation works may not be 'productive' from the 'financial' point of view should not stand in the way of their construction.² It is asserted that the improvement of the well-being and rise in the standard of living of the population are the direct concern of the Governments. Successful irrigation schemes promote these ends, which cannot be satisfactorily reduced to terms of hard cash and increase in revenue.³ It is hoped that the builders of the Pakistan lands will show imagination and foresight in tackling such problems connected with the welfare of their peoples.

*Soil Erosion*⁴:—The standing menace of soil

¹ Published in the Calcutta "Statesman," 12-2-46.

² Memorandum on the Development of Agriculture and Animal Husbandry in India, p. 25.

³ Famine Inquiry Commission Final Report, p. 133.

⁴ Tahir Rizvi: Presidential Address, Section of Geography, Indian Science Congress, Benares, 1941, p. 163.

erosion both in the hills and the plains of the Punjab, especially in relation to indiscriminate grazing and deforestation with all its disastrous consequences, must be prevented. The problems of deforestation, floods and soil erosion are closely interlinked. Some of the worst erosion in India is met with in the Punjab Siwaliks, where the hill grazier has accompanied or followed the wood-cutter and increasingly denuded the soil of its protective plant cover. Not only have the hill slopes thus been subjected to progressive denudation, but the evil effects of gully erosion, too, are witnessed away from the hills. These harmful effects have been greatly accentuated during the last hundred years. The problem of soil and forest conservation, therefore, is of vital significance to the economic future of the Pakistan lands as also elsewhere in India.

Manuring:—To the intensively cultivated and the exhausted soils of both the Pakistan areas, manuring, both green and artificial, is of the utmost importance. In fact, the Imperial Council of Agricultural Research is definitely of the opinion that the use of large quantities of country manufactured fertilizers is of fundamental importance; and so no plan for the increase of agricultural output will be complete unless it provides for the establishment of this industry. The use of bone meal, rock phosphates, ammonium sulphate and nitrogen is advocated. But these should be used in relation to soil types; and especially under the irrigation conditions existing in the N.-West, fertilizers should be subject of careful study. As to the use of green and animal manures, the preparation of compost by rotting the cowdung in a careful manner is necessary. This will

require painstaking and widespread propaganda in villages as the shortage of fuel is a great problem.

Better Seed:—Careful research with due regard to local and climatic conditions must be organised. In fact, in this sphere the greatest initiative will have to come from the state. The lessons of modern research in agronomy, vernalization and hybridisation must be quickly assimilated rather than viewed sceptically on a theoretical basis.¹

Use of Implements:—The improvement of implements is a necessary accompaniment of better agriculture. There is a general impression among the cultivating classes that new ideas in the improvement of agriculture propagated by the educated folk have only a theoretical value. For this notion, the peasants cannot be blamed, because they are the victims of a vicious circle. Really very little planned improvement has ever been attempted by the government, and the peasant's ignorance and poverty are positive barriers to the application of modern technique. But if first things are done first, there is no cause for despair. The peasant has essentially a practical wisdom. For a dry region like most of N.-W. Pakistan, it should be remembered that well-ploughed land retains more moisture and is therefore less dependent upon regular rains or irriga-

¹ Here the writer is referring to the remarkable work of the Soviet Scientist Trofim Lysenko. Dr. Joseph Needham on return from the Anniversary of the Russian Academy of Sciences, Moscow, in July, 1945 in a lecture at the Friends of the Soviet Union at Calcutta said that the British and American scientists were impressed by Lysenko's work but not wholly convinced of it scientifically. For Lysenko's work see Agriculture and Transport, U.S.S.R. speaks for itself series, No. 2, pp. 28—29.

tion. Furrow-turning ploughs are useful and some are already made in the towns and villages of this area. Their use is especially recommended after the harvest for first ploughing.¹ Among the power driven implements which can be used to immediate advantage are tractors which can be used in government forms and bigger consolidated holdings. In the absence of collective socialist farming, collective ploughing by tractors may be advocated. But the geographical circumstances would decide the degree of use. For example, most of the rice area in the East cannot be subjected to this treatment, but in the West the use of tractors as well as harvesters and threshers is both desirable and practical for crops like cotton and wheat.

Land Tenure :--Finally, it must be pointed out that little agricultural improvement on the lines suggested above will be possible if the gifts of geography and nature fail to be utilized as a result of our moribund social and economic outlook. Revolution or no revolution, over large areas of Pakistan, especially in Bengal, the cultivator will have to be freed from the chains of permanent settlement. The case against it has been amply proved by experts and commissions alike.² It was introduced not to advance the interests of the agriculturists but simply to facilitate easy and regular collection of revenue. Space does not permit the detailed discussion of this evil. But the remarks of Sir Nanavati³ may be quoted in this connection : "The fundamental problem of agriculture, therefore, is to transform this occupation from a mode of living into

¹ Brayne : Better Villages, p. 70.

² The Famine Inquiry Commission Final Report, Minute of Dissent by Sir M. B. Nanavati, pp. 351—55.

³ Ibid., p. 374.

a business proposition for the benefit of the cultivating classes. This would necessitate a readjustment of land ownership and reform of land tenure systems so as to facilitate increased agricultural production and its equitable distribution. The only alternative to taking such measures is to witness an accentuation of the various evils in our agricultural economy, such as absentee landlordism, further subdivision and fragmentation, great sub-infeudation and an increasing number of uneconomic holders, share-croppers, tenants-at-will, and landless labourers. The policy of uncontrolled and unco-ordinated action must disappear." Unless the vital problem of agricultural development in Pakistan is solved along these lines poverty will ever remain, crushing all spirit of uplift among the Muslim masses.

In conclusion, it may be added that it would be necessary to achieve a proper balance between the food and the cash crops. The aim should be on the one hand to provide enough food for the people and on the other to maintain a higher standard of purchasing power to enable the procurement of capital goods, clothing and other amenities of life which make human existence happier and fuller.

It is needless to insist that all economic uplift and material development is closely linked up with the question of literacy and educational progress. An illiterate man does not make a good industrial worker, nor will an ignorant peasant over-ridden with superstitions (a multitude of gods and goddesses as among the Hindus) be able to adapt himself readily to new methods of agriculture. Those who explain India's poverty as the result of ignorance and superstition put the cart before the horse. In fact, the process works just the other way about.

Chapter VIII

Industrial Development

The two striking features of modern industry in India are, firstly, a limited development and secondly, an extremely uneven distribution. This is shown by the fact that the number of factory workers in the whole of the country is less than 1 per cent of the total population. Of these, no less than 52 per cent are found in two parts of the country i.e. Western Bengal and Bombay Presidency. Thus, the share of other provinces is reduced to an insignificant figure¹ as compared with their population and natural resources. In fact, modern industry is mostly concentrated in the so called industrial regions round the port towns and a few centres in the interior. These show themselves on a map as big dark spider like spots sucking the life blood out of the rest of the country. This is a legacy of unbridled private enterprise, of lack of any plan, the growth of a variety of local external economies and of politico-historical developments. The evil effects of this excessive localisation and unnecessary concentration have been increasingly realized in recent years, and a tendency for dispersal has been noticed. Some areas which were formerly regarded as 'unsuitable' for industrial development have become scenes of industrial activity e.g. the U.P., Hyderabad, Mysore, Baroda, Kashmir and Rampur, etc. This is

¹ The Location of Industry in India, p. 7.

explained not only by the development of new sources of power, better communications and more abundant raw materials, but also by purely human causes such as encouragement by state governments and the low rents and wages prevailing there.

Due to lack of planning and the freedom of the 'captains of industry' to mint profits wherever quickly obtainable, under the plea of the 'control' of 'natural factors,' to day we are faced by the evil-looking industrial physiognomy of India—marred by congestion in particular centres, by uneven distribution and by unbalanced development as between various regions, and by an utter disregard of the chaos of poverty and disease resulting from it.

But the pity is that in the controversy over the establishment of Hindustan and Pakistan and their respective economy, the present industrial location in India is considered by many as governed by 'unalterable' considerations, verging on immutability; and it is commonly supposed that industries once developed in certain parts of Hindustan would not find a foothold in Pakistan. It is indeed, forgotten, that even if it means increased costs, these have to weigh against the social gain accruing to the comparatively backward Pakistan areas. But quite apart from this, in the case of many industries, more suitable conditions and advantageous factors with regard to raw materials, power, labour and market, would actually be found in the Pakistan areas once the charm of the present chaotic 'Laissez-faire' policies is broken.

Looking at the distribution of large scale industry we find (see map No. 9) that (1) with the exception of the large number of sugar factories (spread over the U.P. and Bihar) and a few cotton, cement, silk, woollen and paper mills, and small glass making establishments, most of the industry is clustered round some centres in Western Bengal, in the North of Bombay province and the S. W. part of the Mysore State. (2) The share of Pakistan lands both in the North-West and the East is small, consisting mostly of jute presses in E. Bengal and of some cotton and woollen mills and chemical and silk factories in the W. Punjab. Is this development consistent with the great natural and human resources of the industrially undeveloped parts of Pakistan? The answer is obvious. The wealth of these regions, consisting of raw materials and power resources, has hardly been touched and the vast populations (potential markets) in these areas have to look to an industrially advanced Hindustan for a large variety of manufactured goods whose price is increased by heavy transport costs. In the following pages is proposed to discuss the various aspects of large scale industries and their present distribution in the Pakistan areas. A description of the cottage industries will follow. Finally, some suggestions are offered with regard to the industrial development of Pakistan in the light of a more rational utilization of her natural and human resources, which may determine the material and economic pattern of the future.

THE COTTON TEXTILE INDUSTRY

The cotton industry is one of the oldest in India and is one which has shown the greatest expansion



INDIA

LARGE SCALE INDUSTRIAL
ARCHIVE CONCENTRATION

KEY TO SYMBOLS

- 1000-2000
- 2000-3000
- 3000-4000
- 4000-5000
- 5000-6000
- 6000-7000
- 7000-8000
- 8000-9000
- 9000-10000
- 10000+

during the last 25 years. To day there are 407 mills¹ of various types with over 500,000 workers employed, but Pakistan's share is small. A few mills are found in Lyallpur, Lahore, Dacca and Nadia (Bengal). There are none in Sind and the N. W. F. Province, in spite of an enormous production of raw cotton as well of vast consuming markets. The industry seems to be concentrated around certain centres i.e. Bombay, Ahmadabad, Cawnpore, 24-Parganas etc. Is this based on 'natural' factors as some imagine? It is now fully recognised that the location of the textile industries is not influenced by the so-called natural factors to any material extent. In most cases the causes are mainly human and historical. In many cases the cotton industry tends to be located at centres with favourable transport relation to the markets. In India, it is mainly clustered round Bombay for no particular causes which may not be found at many other centres in India and Pakistan. For example, factors like humid climate or failing that,—humidization, nearness to the raw material, labour and consuming markets can be found in many other places.

The development of the industry shows that it is governed more and more by the proximity to consuming centres rather than facilities for export. It is now fully realized that in a vast country like India with enormous distances involving high transport costs, the advantage of satisfying local needs by local production will be great, and will undoubtedly be the principal factor in bringing about a decentralisation of productive activity, especially in the case of an industry like cotton textile which tends to be attracted to the consuming areas.²

¹ The Indian Year Book, 1945-46, p. 732.

² The Location of Industry in India, p. 19.

In the development of two important inland centres i.e. Ahmadabad and Cawnpore, the main factors have been the development of communications, nearness to sources of raw material and to vast consuming populations, and labour facilities, though at the latter centre the long staple cotton comes all the way from the Punjab, and at both places coal has to be handled over long distances.

Further, in the future growth of the industry the development of hydro-electric power will play an important part, as has already been demonstrated by the recent progress of the southern Madras districts of Madura, Coimbatore and Tinnevely. Indeed, the expansion of the cotton textiles both in Hindustan and Pakistan is indicated in the important cotton growing areas which would also present a minimum of other advantages mentioned above. With governmental encouragement suitable locations may be found in the Shahpur, Jhelum, Gujrat and Rawalpindi districts in the Punjab. These sites will be near the sources of Potwar Tertiary coals and within reasonable distance of the Himalayan hydro-electric power generation. In Sind which is one of the major sources of Indian long staple cotton, the need for the development of the textile industry is imperative. Karachi and its neighbourhood would be an obvious choice. In Eastern Pakistan, Dacca has already grown into an important centre. In 1921 there was not a single cotton mill there; now there are six with 5,856 workers. The industry may also develop in central Bengal in the districts of Nadia, Rajshahi, Bogra and Pabna etc. All of these lie in the midst of a vast consuming market, where there is a great demand for yarn for handloom weaving. The present position with regard to mills and factories in

the Punjab and Bengal is as follows.—

Bengal	38	32 (including 6 at Dacca).
Punjab	8	14 (Lyallpur 1).

Lastly, it must be noted that the industry shows a tendency towards further expansion. There are enormous and growing needs with the rise in the standard of living both in the Pakistan and Hindustan areas. Moreover, Japan with her vast exports dominated a large market in the East, but her defeat has left a sort of a vacuum. Thus, the Pakistan and Hindustan industry in cotton textiles has prospects of developing exports also.

THE JUTE INDUSTRY

The Eastern Pakistan lands will have a world monopoly of raw jute production. At present more than 2/3 of the crop is utilized by factories in India most of which are located in a small strip of the country, about 60 miles long and 2 miles broad, along both the banks of the Hooghly above and below Calcutta. In and around Greater Calcutta is the region of the greatest concentration. There are only jute presses in various centres of central and Eastern Bengal. All manufacturing is attracted by coal to the west, and transportation facilities have further helped this process.

The industry is of pivotal importance because the raw and manufactured jute exports constitute a leading source of wealth for this part of the country. India generally consumes only 20-25 per cent of the goods manufactured by the local jute mills, the rest being

exported.¹ During the war years more and more of raw jute was consumed by Indian mills. Therefore, jute and jute products will provide an important source of capital goods which will help to buy for the Eastern Pakistan many commodities and services in exchange.

But the dispersal of the industry to suitable locations in Pakistan will be desirable. Water transport facilities are excellent all over Eastern Bengal, and Chittagong may develop into a jute port of first class importance. The development of hydro-electric power both in the Himalayan and Assam hill regions not far from the jute growing plains, and thermal electricity from imported coal will greatly influence the future sites of large scale industry.

THE WOOLLEN INDUSTRY

In India natural factors are more in evidence in the spread and development of this industry than they are in the case of industries like jute and cotton. The influence of climate and raw material largely determines the location of the modern industry. With cooler climate not only does the need for woollen cloth increase but its raw material, in the shape of a larger number of sheep with better wool becomes more readily available. The N.-W. Pakistan lands are not only a region of major production of wool but also the heaviest consumer of manufactured woollen products. Besides, other sources of raw wool lie near at hand in Afghanistan, Iran, Iraq and Central Asia. Some of the main collecting centres and markets are Quetta, Shikarpur, Amritsar, Multan, Lahore, Fazilka, Kulu and Panipat.

¹ The Indian Year Book, 1944-45, p. 720.

While the port of Karachi is invariably the outstanding one for handling exports of raw material, Australia figures as the main supplier of raw wool from overseas.

At present in its large scale form the industry only produces some carpets, blankets and cheaper variety of cloth. The worsted manufacture is small and is dependent upon imported wool, though in recent years the growing needs of the Indian Army have led to a great increase in the manufacture of military equipment. Carpet making is an old industry, but manufacture under modern conditions is characteristic only of the Punjab and U. P., which are not only satisfying local demands but also manufacturing a surplus for export. Of recent origin and development is the making of hosiery which is based upon the growing needs in the country. The largest output comes from the Punjab which utilizes in normal times a great deal of cheap imported merino yarn.

This is an industry for which there are great possibilities of development in the N.-W. Pakistan lands. At present, the industry is localised in the Central Punjab (Gurdaspur, Amritsar etc.) but with better breeding of sheep in the submontane tract and the development of power from the Potwar coal as well as hydro¹ power, a westward move for the industry would be possible. In E. Pakistan Dacca is at present the only important seat of the industry in Bengal.

THE SILK INDUSTRY

India has been famous for its silk manufactures for ages and her fame in this respect lasted for a long time

¹ Hydro-electric.

after the advent of the British. Bengal was the home of excellent and costly fabrics which were made by individuals as well as by small establishments. Later on, machine made foreign goods came into greater prominence. But still Bengal had excellent advantages for the production of raw silk. Unfortunately, in 1875 disease caused widespread damage, and this led to the decline of the industry. This decline was not stopped by any direct measures of the government. As a result of government control and ownership the silk industry has in recent years, made rapid strides in certain parts of India, e.g. Kashmir and Mysore. Can it not be hoped that in Pakistan this industry will receive special attention from the state? It is believed that the moribund industry will be resuscitated if sufficient duty is imposed on foreign silks. Climatically, much of Pakistan's large tracts of Bengal, nearby Assam, the Punjab all along the submontane tract, favoured valleys of the N.-W. F. Province and Baluchistan) lie in the 'silk belt' of the world i.e. between 20° and 42°N lat. Large parts of Bengal and Assam and of the northern Punjab are suitable for the production of the mulberry tree and the rearing of silkworms. For, silk is an industry which can easily flourish in regions which are great consuming areas. Location near many urban centres is possible. The present distribution of the industry is uneven, as is the case with many other industries; and dispersal over suitable Pakistan areas will be beneficial.

The silk industry has three distinct but interdependent branches or stages. (1) Cocoon production, including mulberry cultivation and the rearing of worms

until they spin cocoons which are sold as soon as formed. This Cocoon industry is successful as subsidiary work by peasant families. (2) Reeling out raw silk thread from the cocoons, which is successful when carried out under supervision on a large scale in factories known in this case as filatures. (3) Utilization of raw silk in weaving fabrics and other manufactures in hand looms or in mills. There is a clear interdependence in all the stages mentioned above. An export market is essential for the expansion of the industry. For example, the Japanese preponderance of the industry included the export of both raw silk (85-95 per cent) and manufactured fabrics.

In Bengal:—The sixties and seventies of the last century marked the heyday of Bengal's silk industry when her raw silk dominated the world market and her fabrics, the product of handlooms, figured prominently in the export trade. Both these markets were lost to a rapidly developing and industrialised Japan, basing its industry on improved modern lines. Quality and standardisation are basic to expansion. The closing down of European filatures in Bengal did great harm to sericulture in the province.

In the last few years war needs (mainly parachute components) led the government to invest Rs. 18,00,000 to establish filatures in Bengal with suitable machinery and no less than 87 of these with 2,200 basins between 1943-45 grew up in Murshidabad, Nadia, Malda (predominantly Muslim districts) Birbhum, Burdwan and Cal-

¹ Summarised from C. C. Ghosh: *Crisis in the Silk Industry of Bengal*, Science and Culture, Vol. XI, No. 9, March, 1946, pp. 463-66.

cutta districts received these benefits. Practically overnight the industry was revived, but now for unknown reasons the government has stopped all financial help and the establishments are faced with ruin. Even during this short period the raw silk produced was of the finest quality.

This has been mentioned to demonstrate how with state patronage and help silk production in Bengal has an opportunity of entering the world market, especially when Japan and China are beset with difficulties. There will be an extensive market for raw silk in U. S. A., Canada, European countries, Egypt and Australia, all of which have already made enquiries about the supply of raw silk from this country. Therefore, a Conditioning House for grading silk, a Reeling Section, and efficient supervision are some of the measures advocated by experts.

THE IRON AND STEEL INDUSTRY

This industry is often highly localized. In India too it bears that character, and is centred round a few sites in South Bihar and adjoining Western Bengal. The availability of power through coal, iron ore, and limestone have been great factors towards the development of the industry in W. Bengal. It is true that this combination of advantages is not found elsewhere, except, possibly, in Western Mysore. But it should be remembered that in a number of places the iron and steel industry has developed in the absence of much iron ore e.g. Japan, or coal e.g. Sweden, or both e.g. the Chicago district in U.S.A. etc. of course it is undeniable that countervailing advantages are possessed by

these regions in the shape of transportation facilities, markets and other external economies. In India the excessive concentration of the industry in one region has not been regarded as a healthy sign. Even in 1933-34 it was observed by the Tariff Board¹ that complaints about the monopolistic attitude of the Tata Company had been received; and it was stated that in future it would be desirable that steel production should not remain the monopoly of a single enterprise. In fact, between the period 1921-39 the industry spread to a few other areas. In addition to this a group of industries covering such items as assembling, repairs, welding, structural work, light metal casting, foundries, wagon building, and the manufacture of wire and wire nails etc, what may be called 'general engineering' works have spread very widely to many parts of India. During wartime the Punjab showed an enormous development in this branch of the industry. Some of these industries are carried on in a cottage stage and some on a sufficiently large scale. Similarly, eastern Bengal centres like, Dacca, Chittagong and Bakarganj have figured in this development.

Therefore, contrary to what is generally imagined, in Pakistan there are fair prospects for the development of many branches of the iron and steel industry. The development of power from coal and hydro-electricity, the exploitation of iron ore deposits in the north-west, and the import of scrap and pig iron, would create the necessary basis for the growth of an iron and steel industry.

¹ The Location of Industry in India, Op. Cit., p. 36.

THE SUGAR INDUSTRY

India is the largest producer of sugar in the world with about 5,500,000 tons; and the total value of 'gur' (Jaggery) and sugar produced in 1943-44 was about Rs. 150 crores. The industry itself is the second largest in India after cotton textiles, giving employment to over 120,000 workers and about 20 million peasants.¹ The total number of factories is over 160.

The great northern India sugar belt extends from central Bengal to the Peshawar valley. The Punjab and Bengal are respectively the second and fourth largest producers of sugar cane in India. But the distribution of the factories in the main sugar producing belt is uneven. In some areas there is definite congestion while in others there are few or no factories. For example, out of 166 factories in India in 1939 there were only 2 in the Punjab and 11 in Bengal. The Punjab is an important consuming province, and if the industry were developed here it would have a market in the N.-W. F. Province also. The Punjab's backwardness is mainly attributed to climate, many handicaps of which can be overcome. The only sugar factory in Sind went into voluntary liquidation in 1940. At present sugar is imported into Sind from the Punjab or U. P. in spite of the attendant pressure on transport. It has been estimated that Sind needs about 79,172 tons of sugar annually.² There are great prospects of cultivation of sugar cane and the manufacture of sugar in the province for a large and growing market. Therefore,

¹ The Indian Year Book, 1944-45, Op. Cit., p. 735.

² Pithawalla and Raisinghani : The Calcutta Geographical Review, Vol. II, No. 3, p. 58.

both a human and a natural basis for a sugar industry exist. The same picture is met with in Bengal. Its share of sugar industry is small, but in recent years, Nadia has grown into a centre of importance, employing about 1,300 workers.

Unlike the location of the cotton industry, that of the sugar industry is dominated by accessibility to raw material, and therefore, the industry must be established in relation to the transport of sugar cane. The question of fuel and power is of secondary importance.¹ For successful manufacture not only is a sufficient quantity of cane required, but its freshness, too, is equally important, as the sugar content of the cane deteriorates rapidly after the stalks are cut. Therefore, a sugar factory must be advantageously situated in the midst of a cane growing area. The importance of the raw material is brought out by the fact that in the cost of producing white sugar, the price of the cane represents 2/3 of the total cost.² The power factor can be easily solved by the careful use of the bagasse.

With regard to the necessity of state protection in the early stages of the industry the beneficial results of the Indian Tariff since 1932 may be pointed out. But at the same time it is the duty of the state to see that such protection does not go to provide cover for the industrialists to exploit the consumer. Secondly, in the location of the industry a careful control is advocated, so that indiscriminate crowding of factories and the exploitation of the cane grower may not take place.

¹ Lokanathan : Industrial Organisation in India, p. 71.

² Ibid.,

A word may be added about the utilization of by products. Molasses and bagasse are the two chief by products of the industry. In India, instead of their being advantageously utilized the very disposal of molasses has been a source of difficulty. One of their most important uses can be the production of power alcohol. Other uses are manuring, cattle feeding, road making and the reclamation of 'Usar' lands etc. Power alcohol is produced on a commercial scale in most sugar producing countries without much difficulty; and it is found that alcohol as motor fuel has practically all the essential qualities of petrol, nay, according to some American experts, it shows even greater efficiency. In advanced sugar producing countries alcohol is mixed with petrol by legislation, but in India so far the big foreign oil interests have stood in the way. In Pakistan, state control will have to be exercised in this sphere. It is said that 1 ton of molasses can produce about 65 gallons of power alcohol.¹ Therefore, an appreciable quantity of mineral oil will be saved for other vital needs.

Lastly, a co-ordination of the agricultural and the industrial side of the industry is essential to prevent dryage in slow and long transport. Sites must be planned with regard to the raw material supply gravity centre, power, transport relations and the consumers. Quick transport of cane to the factory and agricultural improvement are both equally important.

THE CHEMICAL INDUSTRY

This is of great importance both to industry and

¹ B. P. Adarkar : The Indian Fiscal Policy. p. 230

agriculture. In other parts of the world, on account of its great usefulness and immense requirements, the tendency has been towards the establishment of huge combines and ugly international cartels. In India the development of the industry took place after World War I, and small establishments were erected in several provinces. Among the heavy chemicals, the most important groups are, firstly, sulphuric acid and the chemicals based on it, and secondly, the various forms of soda and compounds based on them, which make up the alkali industry. It is the first group which has largely received attention in India.

There is a great scope for the development of the chemical industry in the Pakistan lands with the rise of a variety of industries like textiles, leather, paper, glass, porcelain, artificial silk, soaps, mineral oils, paints and varnishes etc. In fact, it may be regarded as a key industry.¹ Among the raw materials sulphur is the most essential and it is a commodity which is available in the N.-W. Pakistan area. Further, gypsum is now being used in increasing amounts in other countries for the manufacture of plaster-boards, plaster of paris and other chemicals. Enormous deposits of rock-salt can be utilized to establish soda-ash factories in the Potwar area.² In the Pakistan areas, it will be desirable to state control the industry on account of its importance, and to plan the establishment of large concerns in favourable sites with regard to raw material, power and markets. The utilization of hydel

¹ Adarkar : The Indian Fiscal Policy : Conclusions of the Tariff Board, 1929, Op. Cit., p. 347.

² Gee : Transactions, p. 345

power will greatly affect the choice of location. The needs of defence will also have to be taken into consideration.

THE CEMENT INDUSTRY

This is a comparatively young industry, though the earliest establishment goes back to 1904 at Madras. In recent times, with the growing needs of the housing and building trades, the important role of this industry has been fully realized. The first opportunity of expansion came with the cessation of foreign imports due to World War I; and progress since 1930 has been steady. But this again is an industry which would need protection¹ from Indian as well as outside competitors, for its secure establishment in Pakistan. In this manner further growth will be possible if there is a progressive programme of public works in the country, including the construction of roads, bridges, dams and reservoirs.

As to the raw materials for the industry, the Pakistan lands of the north west possess many advantages. Both in the N.-W. F. Province and in the Punjab limestone is available not far from the well developed communication lines. Gypsum, an important raw material, is abundant in the area. It must be observed that many Indian factories, including those of Bihar, are situated at a disadvantage from the point of view of fuel and power. Large hill tracts in South Bihar have been denuded of their tree cover due to pressing demands for fuel. In N.-W. Pakistan, desirable locations near big urban centres with facilities of hydel

¹ Adarkar : The Indian Fiscal Policy, p. 342.

power and markets can thrive if carefully planned. There already exist factories at Attock, Sukkur and Karachi. Other suitable sites for cement or lime works may be found on the eastern side of the Salt Range (the Tarki-Domeli locality near the N. W. Railway main line, the Baghanwala, Dandot and Chittidand areas), in the Malla Khel Makarwal area west of the Indus, and also in the adjoining parts of N.-W. F. Province.

THE GLASS INDUSTRY

The present Indian distribution shows that raw material and skilled labour have been more decisive factors in location than power and markets. The greatest concentration is found in western U. P., several hundred miles away from Bihar—Bengal coal. In Bengal the industry is concentrated in the 24-Parganas and round Dacca. In the central Punjab the industry has declined in recent years, resulting in the closing of establishments at Amritsar and Lahore.

The principal raw materials include silica sand, boric oxide, soda ash, salt cake, lime and calcium oxide. The discovery of the Mianwali glass sands (supra-Chap. V) may alter the raw materials factor in favour of the north-western Punjab. Further, the possibility of the manufacture of soda-ash will be of the greatest significance, as on that plea the government has withheld protection so far. In this corner of the Punjab not only is coal available, but the prospects of hydel power development are bright. Similarly, the development of power in the Assam hills will enhance the advantages of Dacca.

In fact, the most important questions are those of raw materials, labour and a large internal market. The state should guard against unfair foreign competition and outside monopoly interests should not be allowed to throttle the exploitation of raw materials so as to safeguard their exports to the rest of India.¹

Skilled Muslim labour (the shishgars) as the in U. P. is interestingly associated with the glass industry.

THE PAPER INDUSTRY

This industry presents, complex factors of location, though it seems to be governed, on the whole, more by raw material and power than other advantages. But the influence of markets has been showing a growing effect. The usual raw materials are the Sabai grass, bamboo, cotton, rags etc. Hitherto no wood pulp has been utilized in India. Sabai grass from the Punjab came into early use, but power and market facilities attracted the industry to the banks of the Hooghly. With the passage of time the advantage of sources of power near those of raw material is being realized. Thus, locations either near big urban centres due to facilities of labour and the supply of rags and waste paper etc., or close to the bamboo and Sabai areas, raw materials bamboo is of great importance. Bengal is the second largest producer among Indian provinces with an estimated output of 100,000 tons in a total of about 600,000 tons for the whole country. At the present rate of utilization not more than 40,000 of this (All-India) is absorbed in the mills. Eastern Pakistan can develop into an area of paper manufacture as well

¹ Adarkar : The Indian Fiscal Policy, p. 387.

as a bamboo pulp exporting region. It possesses other raw materials in the shape of jute and hemp waste, as well as considerable sugar bagasse, all of which can be utilised in the manufacture of paper.

In connection with this industry a policy of active research as well as of protection will have to be followed by the government.

In all great paper producing countries the most important source of pulp are the coniferous soft woods. Many hilly regions of Pakistan (as elsewhere also) which are forested and possess favourable climatic conditions must have some proper species of coniferous timbers to yield a required quality of pulp. One obstacle to this has certainly been a lack of research; although, perhaps, considerations of transport difficulties have also stood in the way. One instance of a conscious effort on right lines may be pointed out here. The United States has been for long importing pulp from Canada, but recently after intensive research and by an active policy of afforestation, a kind of pine is being grown in the Southern States, which after five years of growth yields the kind of wood best suited for pulp making.

TANNING AND LEATHER INDUSTRIES

This industry has shown great dependence on the availability of tanning material. The bark of the Madras shrub 'Avaram' has been the chief factor in making that part of the country the scene of development of the industry. In northern India the 'babul' tree bark is considered an excellent substitute. N.-W.

Pakistan lands not only possess a great source of raw material (the large number of livestock and sheep) but also numerous babul trees are found in the dry tracts. There is a large supply of labour in both parts of Pakistan where thousands of hands work, by indigenous processes. For the production of raw hides Bengal ranks first; yet no dressed hides are produced in that province.¹ Similarly the Punjab, in spite of being an important area of raw material, and in spite of possessing tanning barks, produces only 1 lakh pieces of leather annually. At present enormous transport costs are incurred in moving tanned hides from distant centres, chiefly due to the control exercised by the tanning material and by skilled labour. Apart from this, leather manufacture has been very largely determined by the establishment of government ordnance factories²

Thus purely artificial factors have so far governed the location of the industry. Another important factor is the fact that in India a much larger portion of the tanned leather is processed with chrome than with vegetable material, because as a result of the former process a raw hide can be converted more rapidly into leather. Pakistan areas in the west are among the leading sources of chrome in the world. Therefore, there is no reason why large scale industry on the pattern of the Bata Shoe Company may not be founded in Pakistan.

SOME OTHER INDUSTRIES

Only a brief mention may be made of some other large scale industries which have possibilities of deve-

¹ Lokanathan: Industrial Organisation in India, p. 54.

² Ibid., p. 55 Vide Report of Industrial Commission

lopment in Pakistan. These include vanaspati ghee making, soap making, chocolate and biscuit factories, because for them raw materials as well as huge markets exist.

The *match industry* is expanding. The Punjab has considerable supplies of timber, and sulphur is available from other Pakistan areas. In the submontane regions close to sources of hydel power and wood, excellent sites for the location of this industry will be found. Protection against foreign competition will be necessary, as powerful interests of international finance are at stake. The efforts of the Swedish Company (a huge international combine) to kill the Indian match industry are a pointer in that direction.

COTTAGE AND RURAL INDUSTRIES

In any scheme of economic development in Pakistan, including agricultural improvement and industrialisation, special attention must be paid to the organisation and establishment of appropriate cottage industries. The immense agricultural resources and the industrial potentialities of Pakistan have already been discussed. But it may be pointed out that these regions are also essentially lands of domestic handicrafts and of individual rather than corporate methods.¹ The two zones, being primarily agricultural, are most suited to the development of a variety of cottage industries which depend upon agricultural raw materials. In spite of the break-up of the self-sufficient economy of the past, there is no dearth of clever handicraftsmen and artisans in India. Thus, side by side with the setting up and development of the key and heavy indus-

¹ M. Yunus : Industrial Pakistan, p. 2.

tries, the progress of the cottage industries will not only help to a great extent in tiding over the difficulties brought about by the movement of rural population to large scale industrial centres; but in itself it will become a factor in economic prosperity. For, the encouragement of the cottage industries is not only an economic, but also a social and moral problem the solution of which is of the highest importance to the country.

In the following pages a brief description of the nature and development of the rural and cottage industries of the Pakistan areas is provided.

Bengal :—First comes the hand-loom weaving in all its branches viz., cotton, silk and jute. It is the most important cottage industry of this, area, subsidiary to agriculture and providing employment to a large number of people. In the past the artisans working in these raw materials had a world reputation and there was an export market abroad. But in spite of some initiative very limited work has so far been done¹ by the provincial government through its Department of Industries. This can be judged from the fact that in a period of 20 years only two district weaving schools, 29 peripatetic weaving schools, and only 16 weaving demonstration parties have been established. Their object is the giving of practical training in industry to the agriculturists and other rural elements in the population. Surely, this achievement can not be a matter for pride for a province with a population of over 60 million. Other industrial occupations in which some training has been provided by the government are metal

¹ Taken from the official information submitted to the Famine Inquiry Commission, 1945 Report, p. 492.

casting and polishing, cutlery, pottery, umbrella making, soap making, boot and shoe making, and tanning.

The handloom industry has obviously a promising future as well as a tremendous usefulness for increasing the income of E. Pakistan's rural population. Raw material for its three important branches i.e. jute, cotton and silk, is locally available. Labour and market facilities exist near at hand, Indeed, governmental initiative is necessary not only to provide training on a much larger scale but also to facilitate the supply of yarn and the marketing of finished products. Part of this industry in the eastern regions would greatly benefit from the development of hydel power in the Assam hills.

The hand-made paper industry has received some attention in recent years, but governmental help has not been adequate. This industry has old roots but needs direction with regard to the present market needs. Raw material is plentiful. Recent experiments of certain organisations in training female labour as a scheme of rehabilitation work have borne useful results e.g. the training organised by the Mahilla Atma Raksha Samiti, after the famine of 1943.

*The N.-W. F. Province:—*Quite mistakenly the Pathan is regarded as excelling only in the art of sniping from his concealed mountain perches. Few are aware of his capacity for hard work, ingenuity of mind, and artistic nature. Indeed, during the entire period of British rule, he has been popularly considered only a fighter par excellence. That he undoubtedly is.

But the dictates of geography and environment have made him excel himself in many crafts which cater for his needs. But state help has so far been next to nothing and little information and data has been collected.¹

The following industries dependent upon local raw materials may be pointed out. (1) Those based on the utilization of fibres and grasses and other vegetative sources. For example, rope and mat-making from mazri (dwarf palm) and basket making from other palm leaves; the manufacture of sajji (soda) from the Khar shrub in the southern districts; the making of painted ornamental boxes from tamarik wood in the D. I. Khan district; and, lastly, the vegetable oil industry. (2) The Animal industries which include manufacture of wool-blankets and cloth in the Hazara district and Swat State. The utilization of other animal products in industries includes bone-meal and lime-blood manure, and button making from bones. Sericulture and bee keeping are typical of Hazara district. (3) Making and repairing of agricultural implements. The remarkable genius displayed in the construction of rifle-parts and other weapons among the hill folk, especially in the south. (4) Among those cottage industries which are of recent origin due to some government initiative, may be mentioned the starch industry, using potatoes and wheat as base; paper making from 'tap' and 'kahi' and other grasses and the lac industry based on the 'ber' trees in Peshawar and Hazara districts.

Among the large and medium industries of recent origin are the fruit dehydration establishments. This industry is centred mostly in the Peshawar district,

¹ Famine Inquiry Commission Report, p. 500.

chiefly because of transport and market facilities. There are 29 dehydrating centres in that district, and 6 in Miranshah. With regard to its importance the Famine Inquiry Commission observed,¹ "The development of the dry fruit and fruit caning industries in this province is probably the most promising measure for providing a supplementary income and livelihood for those employed in agriculture. Many thousands of persons are already directly or indirectly engaged in these two industries and much of this labour is at present drawn from the tribal territory and outside the province. After the war, this outside labour should be replaceable from within the settled districts of the province." A careful expansion and development of the industry, therefore, will certainly be able to cater for export markets in Hindustan and elsewhere.

At present there is only one sugar factory at Takht Bhai in the Peshawar district; but there is ample scope for the construction of other factories in view of the availability of raw material, future hydel power development and a large consuming area. In fact, prospects are bright for a many sided industrial development in the Peshawar Valley.

Sind:—The usual story of government indifference is repeated here. It was pointed out by a recent Commission² that, "There government has done nothing worth drawing attention to, by way of example, in the way of developing these (cottage and rural) indus-

¹ Famine Inquiry Commission Report, p. 500.

² *Ibid.*, p. 504.

tries, in the 20 years prior to 1941-42."

The industries subsidiary to agriculture are cotton ginning, rice husking, wheat milling, cotton-seed oil extraction, gur making, ghee making and agricultural implement making. Members of the Commission, referred to above, observed that in the cultivated areas of Sind no one at present need be out of a job, as agriculture itself in most areas creates a larger demand than the supply can satisfy. For the desert areas and the one crop areas the best outlet for spare energy would appear to be agricultural implement making, ghee heating, wool production and poultry keeping.

The Punjab :—This province with its vast agricultural wealth has naturally a number of industries subsidiary to agriculture. For example, dairy farming cattle and sheep breeding, poultry farming, fruit and vegetable preservation, bee-keeping, wool spinning, Lac culture and sericulture etc. may be mentioned.

Cattle breeding is highly suitable to the geographical and climatic conditions of the Punjab. Pakistan's share in this occupation would be large, as the 'barani' (rain fed only) areas in the north, south-west and south-east are eminently suited for the breeding of draught cattle on an economic basis, as large tracts are available for grazing. Thus the dairy farming activity is characteristic of the Punjab farmer. If state encouragement leads to a co-operative effort based on the improvement of breed of milch cattle and up-to-date instruction, there is no reason why this part of Pakistan may not develop into a surplus area for the export of milk products. So far government help has been

limited only to the maintenance of a dairy herd at the Lyallpur Agricultural College for the purpose of teaching and research. In 20 years' time the milk production of the cattle has been raised, by modern methods, more than three times i.e. from 5.6 pounds to 10 pounds or more.

Similarly, sheep breeding is a source of a valuable raw material i.e. wool and skins which may go to build up two large scale industries of the future. The government has already done something towards the improvement of breed. This work will have to be carried on with great earnestness. The making of blankets, chadars and pattus is chiefly centred in the submontane tract from the Jamna to Jhelum, the main centres in the west being Gujrat, Hoshiarpur, Dera Ghazi Khan, Jhang, Sialkot, Amritsar and Batala. Goat's hair can, besides, be used for making coarse sacks, ropes and mattings; camel hair can provide ropes and sacks; and tweeds can be made by mixing these with wool. Horse hair can be used for the making of coarse fabrics, mattresses and brushes of all kinds. A new spinning-wheel has been designed by the department of industries which enables wool to be processed both for weaving and knitting, so that blankets and all kinds of tweeds and cloth, including cloth fit for export, can now be made in villages.¹

Among other animal products going into the development of cottage and medium sized industries may be mentioned the tanning industry. On account of their religious scruples few Hindus work in the various branches of the leather industry. More tanning mate-

¹ Brayne : Better Villages, p. 263.

rials are found in Muslim areas, e.g. chrome and babul bark, than elsewhere and there are no scruples of a social or religious nature.

A host of cottage industries based on leather can produce such articles as shoes, bags, 'hukkas', 'Charas', daf, book-binding material etc. in which the artistic talents of the people can be exercised. A flourishing export of camel and horse hides can be developed with the United Kingdom and other European buyers. This material can be supplied from the whole of the N.-W. Pakistan area. Blood can be utilized in the making of manures and essences, and bones have a large internal and foreign market. Other materials possessing future European markets may be horns, hoofs, catgut, gelatine etc.¹ The sports goods industry of Sialkot and its neighbourhood is known throughout India and South-East Asia.

Production of poultry and eggs can be considerably increased. The lesson of countries like Denmark, Latvia, Estonia etc. must be an eye opener to those who regard this occupation as an ordinary village activity. The war recently stimulated trade in the sale of eggs and fowls. Of the six experimental forms established i.e. Jullunder, Gurdaspur, Lyallpur, Montgomery, Multan and Rawalpindi, five are in the Pakistan part of the province. Future work can be conducted on the model of the Gurdaspur scheme where an electrically worked incubator with two brooders has been put up. The collection of feathers will provide occupation to many and encourage modern uses to which they can be put.

¹ Latifi: *The Industrial Punjab*, pp. 102—128, gives an excellent survey of Punjab's resources in industries 30 years ago.

Among the vegetable products fruit culture has great possibilities, and tinned and bottled fruits and vegetables are bound to gain popularity with an increasing number of consumers. Numerous cottage industries would be able to utilize such vegetable fibres as sann (Indian hemp) sankukra or patsan, munj, bulrush, pannu grass and loofah. Wheat and barley straw are no less useful. The making of hand-made paper was very important in the past when Sialkot was the centre in the Mughal times; and it is said that 8 lakhs of rupees worth of paper was made annually.¹ This industry can be revived in Pakistan's submontane tracts where the use of hydro-electric power will be an advantage.

Vegetable oil would be the basis of many other industries which would be needed not only for human consumption but such industrial purposes as soap-making, lubricants, leather dressing and candles, glycerine and pitch etc.

A passing reference may be made to the enormous growth of sericulture which now embraces about 16 districts of the Punjab. Both mulberry culture and the supply of good seed and reeling have made great progress. In the silk industry the cottage producers can show not only their traditional skill in producing fine daryai (one colour) gulbadans (striped silk) qanavez (thick cloth for skirts) and garda (thick cloth with border on one side); but also items of modern taste like curtains, table covers, cushions and draperies etc. which would develop a European market.

¹ Latif : Industrial Punjab, p. 120.

Similarly, in cotton fabrics the producers need not concentrate on article of large scale industry, but should produce many specialised goods with range and variety, to cater for multiple tastes both in the home market and abroad. Propaganda and information about modern tastes and designs would be fruitful.

During the war many small industries flourished in the Punjab. Of these, the industries which are likely to survive are cutlery, for which Wazirabad and Nizamabad have become noted; surgical instruments, a speciality of Sialkot; agricultural implements; electric goods; buttons; and shoes. But these industries would need some form of protection.¹

The brief survey of the large scale and the cottage and rural industries of the Pakistan lands reveals one very important fact—an agro-industrial and animal industries complex is indicated for these areas. This industrial development must have a neotechnic bias, with increasing use of electric power in small and big undertakings. It is confidently expected that the need for rapid and planned industrialization will be fully realized and that the makers of Pakistan will not waste time in an academic debate on industrialization versus ideas of well-being mainly based upon the spinning wheel and the return of the self-sufficient economy of the mediaeval village! There is no merit in the contention that to draw masses of people into industry will rob farms of needed labour and invite food shortages or famine.²

¹ The Calcutta "Statesman", 20-10-45

² Mr. Jinnah's observations in an interview at Bombay with the correspondent of the Associated Press of America, published in the Calcutta "Statesman," 10-11-45.

All countries cannot have a single and uniform industrial pattern, as the life circumstances of regions composing them differ greatly. Natural resources are a matter of distribution—and at that, in an unequal proportion. Intelligent and progressive peoples make the best of their advantages; and planning and organization are the very life of their proper utilization. It is apparent that the increasing role of state control in the interests of the vast masses of the people rather than a small bunch of captains of industry, is being fully appreciated in our times.

Therefore, with the help of state guidance, it will be necessary to develop future industry in such a manner as to prevent an overgrowth of heavily congested industrial centres, and to secure a widespread distribution as between regions, while fully utilizing the optimum conditions available in certain localities. A diversity of industry should be aimed at for each region, with a proper proportion of primary and secondary industries and with due regard to the distribution of urban and rural population. In the Pakistan lands the following factors must be specially noted. (1) Because of the enormous distances to be covered if industry is hinged to only a few spots, the development of local industries is desirable. (2) The imperative necessity for the development of communications both by land (rail and road development) and by water (inland river transport and coastal shipping) will create an altered pattern of facilities which will open up regions so far handicapped by lack of transport in their industrial development. But the means of communication and trans-

port under state control should not be regarded as commercial concerns designed to mint profits;—they should be public services meant to further the welfare of the people. The effects of this development both in the North-Western and Eastern Pakistan lands would favourably influence the agro-industrial possibilities of those regions which possess rich raw materials and plentiful supplies of labour. (3) Lack of cheap power supply has so far prevented the industrial development of many parts of India. Industry has hitherto been dominated by a coal 'complex' and that source of fuel is concentrated in a small area in South Bihar and Western Bengal, and heavy costs of transport are incurred in taking the coal to remote places. This is a weakness in India's industrial structure as a whole. Besides, it should be realized that even in the U.S.A. the coal mining industry has been showing increased costs. Within the last 50 years average working depths in the anthracite fields of Pennsylvania have increased by 77 per cent and a reduction in the average thinckness of beds has also taken place. Indeed, coal and oil once depleted can never be replenished.

In the case of the Pakistan lands, as well as some other parts of India, lack of power can be overcome by the development of hydel power resources, which though costly to begin with will ultimately free the country from excessive dependence on coal, and, due to facilities of transmission lines, lead to a desirable dispersal of industry. Thus the future location of industry in many parts of the Pakistan lands will depend upon the extent to which the water power resources are developed. For,

apart from the iron and steel industry, there are many industries like aluminium, soda, soda compounds and fertilizers etc. which may be located near the water power zone, provided cheap electric power is available. In addition, the development of hydro-electric power must be undertaken not only to improve amenities in urban centres, and build up big industries, but to develop rural industries as well. The utilization of Tertiary coals, in various ways, as has already been pointed out, will be another important feature of the future industrialization of the N. Western Pakistan area.

(4) Industrial development should be taken up simultaneously with the improvement of agriculture and animal husbandry, as the two things are inter-dependent.

Indeed, the basic policy of a regionalization of industry and its wide dispersal would be desirable. Not only has a socialist country, like the Soviet Union based its industrial expansion on such lines; but many other leading capitalist countries also, like Britain (with the help of the Special Areas Act, 1934) the U.S.A. (the magnificent effort involved in the development of the Tennessee Valley Authority Scheme) France and the pre-war fascist regimes of Italy and Germany, resorted to state action to achieve this end. In the comparatively underdeveloped (and many undeveloped) parts of Pakistan there are more chances for securing a new and desired pattern of industrial distribution than in those parts of India which are already highly developed industrially, because much less interference with and transference of older establishments would be needed.

But some kind of half-measures should not lure us to ignore the advantage of resolute action based on constructive and thoughtful planning. After the difficulties, destruction and tribulations of the last War, the present tendency is more and more for state control rather than merely regulatory action on so-called 'national lines.'

Chapter IX

The Shape of Things To Come

In the preceding chapters an attempt has been made to stress the feasibility of Pakistan on economic-geographical grounds. It has also been hinted that, in the light of Indian history, there is nothing to wonder at, or to curse the Muslims for, if they feel a sort of separatism. If freedom is to be achieved in as speedy a manner as possible, then it is no use singing the old song that Hindus and Muslims are very much alike, socially and culturally,—barring only some minor differences; that there is, therefore, no deep-seated psychological basis of differences culminating in their respective trends in political aspirations; and that, with the exit of the British, a larger share of modern education and some religious reforms, Hindus and Muslims will be cemented into a united people. Those who repeat these fallacies, declare that Pakistan is economically impossible and politically absurd, for no such thing has ever been recorded in the text books of history and political economy, and is unheard of in liberal democracy.

It must be realised that the Pakistan idea can neither be dismissed as a momentary passion nor as a passing emotion bestirring the Muslims of India. It

is assuming the form of a national movement and aims at the reintegration of the Indian Muslims, as a people free to chalk out their own destiny in their 'homelands,' wherever in India they can claim rightly that they have their homelands. India is a multi-national country and the Pakistan demand is the expression of the indomitable urge of Muslim nationals to be masters in their own homes. An equal status is visualised for the Hindustan and Pakistan federations, as also with other nations and states, in the United Nations Organisation. The recent elections to the central and provincial legislatures have shown that this movement has awakened the Muslims as never before to a sense of their national future. The religious and the patriotic character of the Pakistan movement has deeply attracted both the younger and older generation to its ideals. Indeed, it is undeniable that when the movement succeeds finally, it is bound to exercise a profound influence not only on politics in India, but throughout the Asiatic Continent as well.

The Hindu-Muslim problem in India, it must be repeated, is not entirely a religious one. It is fundamentally a question of political power with an economic back-ground. The purpose of the scheme of Pakistan to many thinking minds is separation for a different and more equitable integration.¹ On the one hand this seems the only solution of the Indian political impasse, while on the other in the event of its achievement, if Pakistan and Hindustan are recognised as distinct political units on a basis of mutual goodwill, the bonds of sympathy between the two units will grow. In a con-

¹ Panikkar : The Future of South East Asia, p. 33.

dition of discord and civil war none can retain their freedom.

But inspite of its deeply national and patriotic character, the most common and superficial criticism of the Pakistan idea is, that it cannot be supported and conceded because mere sentiment and emotion are its sole recommendation. Even such criticism admits however, that the true test of the demand lies in its being necessary as well as feasible.¹ But the idea cuts across the traditional and preconceived political thinking of such critics, and therefore must be rejected outright as a reactionary concept invented by a bunch of upper class Muslim leaders. Thus runs the argument of this sentimental school of opposition.

Objections are also raised by many historians, economists, geographers, and planners, on the score of the absence of a historical parallel and the impossibility of existence on economic and material grounds. Historically Pakistan is presented as an absurd novelty,—a mixture of sentiment with prejudice. Its opponents are horrified at the idea of the application of the principle of self-determination to the political aspirations of Indian Muslims. Misplaced parallels are drawn from the history of other peoples though that history be a product of entirely different circumstances. Unity in diversity is inconceivable to them, and a kind of religious faith is displayed in the 'Unity of India' created under the British rule during the last 150 years. Culturally, they ignore the socio-religious realities and the atmosphere of seclusion and different historico-religious conceptions of the two peoples.

¹ Kulkarni : Is Pakistan Necessary? p. 3

Speaking of the myth of the 'geographical unity' of India, it should be remembered that it was affirmed more strongly than ever by the late Viceroy, Lord Linlithgow in a speech in Calcutta on 17th December, 1942! That 'unity' between the Himalaya and Peninsular India is perhaps only found on a map. Over this sub-continent there exists a variety of relief and environment, with its attendant human and economic distributions.

Economically, the Pakistan lands are stamped with poverty¹ and backwardness. And what is most interesting is the fact that the picture of the present economic conditions is regarded as immutable. Their revenues² today are small; therefore, Pakistan areas will not be able to bear the burden of independent existence. Does any one argue that the present national wealth of India is small, and that, therefore, she should remain tied to the apron strings of Britain and her Commonwealth? Many provide a highly distorted picture of the industrial resources of the Pakistan areas, which are declared to be doomed as backward pastoral-cum-agricultural regions.³

As has been already discussed⁴ at length, the Pakistan regions will constitute rich areas. There will be a vast population (approximately 70 million Muslims alone) and an area $\frac{1}{4}$ that of the Indian sub-continent. They will be a leading producer of wheat, rice, jute and live-

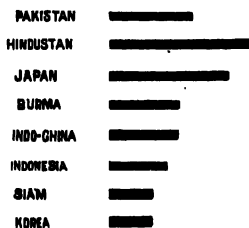
¹ See Rajendra Prasad: *India Divided*, Chap. V and K. T. Shah: *Why Pakistan and why not?* p. 280.

² Lajpat Rai: *Hindustan or Pakistan*, p. 80.

³ R. Mukherji: *An Economist looks at Pakistan*, pp. 20-22.

⁴ *Supra* Chaps. V, VI, VII and VIII.

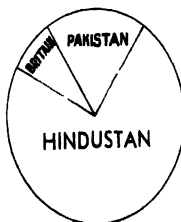
RICE



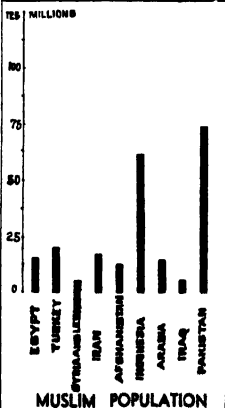
WHEAT



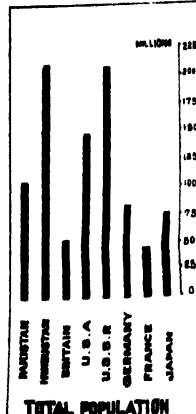
0 2.5 5 10 15 20 25 MILLION TONS



AREA



PAKISTAN'S POPULATION



stock and an important source of cotton, sugar-cane, millets and oil seeds. They will possess the largest share of minerals, like Tertiary coals, oil, gypsum, chrome, sulphur and rock salt. In the opinion of Sir Cyril Fox, Baluchistan and Sind were the most likely areas in India to be investigated in search for oil. Investigation on a scientific scale has already been started in the Kalat State under the direction of the Geological Survey of India (November 1946). There are also iron ore, precious stones and a variety of other useful minerals. Water power resources are great and development in that direction will largely determine the industrial pattern of the future. The position may be expressed as follows :—

Resources in Pakistan and Hindustan in which they would have advantages over each other :

PAKISTAN	HINDUSTAN
Tertiary Coal	Coal
Oil	Manganese
Sulphur	Iron Ore
Gypsum	Mica
Chrome	Gold
Rock Salt	Bauxite
* Glass Sands	Glass Sands
* Limestone	Limestone
* Water power	Water power
Jute	
Wheat	
Rice	
* Cotton	Cotton
* Sugar-cane	Sugar-cane
* Livestock	Livestock

* Sharing advantages.

To the present writer's mind, inseparable with the idea of the establishment of Pakistan, is the tremendous responsibility to inaugurate a programme of people's well-being, on the basis of the betterment of the lot of the peasants, the rights of the workers, the opportunities for education, the provision of medical facilities, along with agricultural improvement and industrial development.

The war years were years of great opportunity; but an unimaginative government, without any sound plan, laid the basis of an economic chaos by merely developing certain subsidiary war factories, which immediately registered the effect of the end of the war by curtailing production, and then throwing thousands of industrial workers into the whirlpool of unemployment. It is a fact that very large sections of the masses in the Pakistan regions have not passed—have not had the time to pass—through the period of industrial capitalism; and consequently there is a limited industrial proletariat. Therefore, there will be a passage from primitive forms of economy (handicrafts and cottage industries) to a neo-technic orientation (age of electricity). In order to accomplish this difficult task, it will be necessary in connection with all future economic planning, to pay due regard to Muslim cultural and historical evolution and peculiarities of economic and social life.

Thus the requisites of this New Age for the Indian Muslims would be, firstly, complete independence, establishment of a vigilant and active democracy and a great measure of state control, if not the immediate

establishment of socialism. Thus alone will planning have any meaning. There must be, too, a full and careful conservation and utilization of natural and human resources—not hoarding the nation's wealth, but preventing wilful waste and unproductive idleness, by efficient development and wise utilization of every productive element. This alone will fulfill the progressive concept of Pakistan, which is visualised by millions of Muslims.

But how can this be done? As has been recently suggested even by a European expert, "A combination of persuasion, concessions and compulsion is doubtless the best procedure; and compulsion is particularly necessary if immediate profit is likely to interfere with national policy."¹ Nationalization of the mineral and water resources should be the first step in a programme of progress and construction. State acquisition in other spheres of production may follow according to circumstances. This interference with private ownership would have been shocking in the world of 1939; but to-day we have before us the example of the measures adopted in the highly developed capitalist countries i.e. Britain (Bank of England, Coal, housing and civil aviation and possibly electricity) France (coal, iron and steel and transport etc.) and comparatively backward states i.e. Yugoslavia, Poland, Rumania, Bulgaria and even little Albania. Pakistan will have an advantage of starting with a clean slate, because of the comparative absence of the vested interests. Mr. Jinnah has himself very categorically declared, "Pakistan would

¹ Dr. Burns: *Technological Possibilities in the Development of Indian Agriculture*, p. 39.

be a democracy. Its major industries and public utility services would be socialized (he hoped personally)."¹

Thus the fundamental basis of planning for Pakistan may be suggested as follows :—

(1) All the various elements of the plan should be subordinated to the purpose of carrying out the aims set forth i.e. increasing public wealth, steadily improving the material condition of the people, raising of their cultural level and consolidating their independence and freedom.

(2) Basing the plan on a detailed calculation of potentialities, with due regard to the existing development and possibilities of further exploitation dependent upon human and technical resources available. But it is the basic axiom of progressive planning that existing production-capacities cannot serve as the sole criterion in mapping out production programmes, if the government is convinced that a drastic increase in the output of one branch or another is necessary. Therefore, a detailed survey of natural resources will be necessary from time to time.

(3) No planning howsoever gigantic and ambitious will be scientifically conducted, unless it takes proper note of regional realities e.g. a consideration of the entire life circumstances (natural as well as cultural) of the various regions. Regionalism aims at the discovery and the development of the economic realities of a terri-

¹ Interview to Associated Press of America Correspondent, Bombay, November 8, 1945.

torial unit which forms an integral part of a larger unit, the country. This field of investigation specially requires the services of trained geographers, who are best fitted to collect the basic facts and interpret them in a scientific manner. First of all, a new set of large scale survey maps will have to be prepared, because our existing sheets show only a very limited number of basic facts, having been primarily undertaken from a military point of view. For large parts of Pakistan, new mappings, which must be kept up-to-date are absolutely essential, because over these flat alluvial plains hydro-graphic changes take place with an amazing rapidity. A land utilization survey is also absolutely essential.

These features of planning may be stressed because in a comparatively undeveloped country like the Pakistan lands, many economic realities have so far remained undiscovered. Therefore the plans of political leaders, industrialists and bureaucrats for 'target achievements' in schemes of economic planning must be tested on the anvil of sound regional planning. This task would need the services not only of technicians and engineers but also of trained geographers, economists, psychologists and educationists, to moderate the oft repeated rush tactics of the former.

(4) Planning and the development of scientific education must go hand in hand. We just cannot go on depending entirely on foreign technical help. Among the scientific personnel, particular attention must be paid to the training of geologists and geographers, irrespective of expense. The setting up of a Geographical and Geological Board to assist in assessing the country's

resources and advising the National Planning Commission will be a step in the right direction.

(5) The supervision and execution of the plan would be as important as its chalking out. Therefore, a proper personnel in positions of responsibility and trust will be absolutely necessary.

(6) Above all, will be needed the moral and political unity of the people which will only result from the well-being and the improvement of the lot of the common man. The establishment of Pakistan without the adjustments necessary to give the vast masses of the people a fair deal, will defeat the very purpose for which it is meant to be brought into being.

But whence will come the guarantee for translating into action the programme for Pakistan outlined above? To the writer's mind this sanction firstly comes from the very spirit of Islam and secondly, from the declarations and professions of some of the most outstanding leaders of the Muslims.

Above all, the Muslims, are to be guided by the spirit of Islam itself. Islam means peace, greeting, salvation and the striving after righteousness. Among the principal bases upon which the Islamic system is founded, are charity and brotherhood among mankind, principles from which spring ideas of social justice and equality of opportunity.¹ A historian² rightly says of the social and economic conditions of the masses when Islam came, "They possessed no civil rights or

¹ Amir Ali: Spirit of Islam, p. 138.

² Ibid., p. 268.

political privileges. These were the monopoly of the rich and the powerful." There may not be, technically speaking, the same status amongst the masses in the Pakistan lands to-day; but can anyone deny the conditions of misery, want and ignorance in which our common people live? Is it not time that the principles of a truly Islamic life be set in motion to elevate the lot of the people?

With regard to matters international and respect for other nations, it may be pointed out that Islam is opposed to isolation and exclusiveness. By the laws of Islam, liberty of conscience and the freedom of worship were allowed and guaranteed to the followers of every other creed under Muslim rule. The famous passage in the Quran, "Let there be no compulsion in religion," testifies to the principle of toleration inculcated by Islam.¹ Of the word and example of the leaders, stand foremost the Pious Caliphs. For example, the measures taken by Caliph Umar to secure the agricultural prosperity of the people evince an ever present solicitude to promote their well-being and interests. Taxation on land was fixed upon an equitable and moderate basis, aqueducts and canals were ordered to be made in every part of the empire. The feudal burdens which had crushed the cultivators were absolutely withdrawn and the peasantry were emancipated from the bondage of centuries. Would the builders of Pakistan refuse to walk in the footsteps of their most revered leaders of Islam?

¹ Amir Ali : Spirit of Islam, Op. Cit., p. 212 (Sura ii, 257 —a Medina Sura).

Coming to our own times, it would be best to quote first of all Mr. Jinnah himself who is reported to have declared, "Equitable taxation levied in a manner consistent with social justice would be our policy." He continued, "Pakistan will be a Muslim State, but as far as the Muslims are concerned, there would be no social barriers of any kind against the Hindus or any one else. The Muslims are a people who believe and act on the basic principle of equality of manhood and fraternity; Personally, I believe that in these modern days essential key industries ought to be controlled and managed by the state. That applies also to certain public utilities."¹

Further evidence of this attitude is provided by a declaration of future policy contained in a recent manifesto of the Bengal Provincial Muslim League.² With regard to the abolition of monopolies in Pakistan, it says, that all rent receiving interest in land shall be abolished. All key industries beginning with transport shall be immediately nationalized. All existing monopolies, particularly in jute shall be forthwith abolished. The interest of the peasants shall be protected and all rents shall be standardised and all forms of iniquitous impositions and levies shall be abolished. The state shall undertake large scale irrigation projects so that peasants in no part of the country may be denied the facilities for cultivation. In connection with post-war planning it emphasised that industrial development,

¹ Interview to Associated Press of America, Bombay, November 8, 1945.

² Draft Manifesto of the Bengal Provincial Muslim League by its Secretary Abdul Hashim, pp. 6—7 and p. 11.

especially the establishment of heavy industries, is necessary. The development of agriculture has to be planned; this includes improved methods of cultivation in a scientifically organised agriculture. Permanent Zamindari Settlement must be abolished. And finally, the manifesto adds, "All forms of vested interests whether on land or in capital have to be rigidly controlled to pave the way for democratic reconstruction of society. Particular attention must be paid to weed out the profiteers and parasites who have grown as an anti-social element during the war."

An indication that the mind of many other¹ important leaders of the Muslim League is working along similar lines is given by a recent election manifesto which said that the candidate stood for (1) Freedom of India and in a free India for freedom of the Muslims. (2) The establishment of a people's democratic rule in those areas where the Muslims are in a majority. (3) The reduction of rents and taxes for the poor rural population by at least 50 per cent. (4) Land for the poor peasants with less than 10 acres. (5) Building of new canals, and setting up of village industries, against police oppression, and profiteering and for fair distribution of the necessities of life to the peasantry.

Finally, in more than one way the benefits of the great Soviet experiments are before us especially the economic transformation brought about in the once backward Central Asian Muslim Republics of Tajikistan, Uzbekistan, Turkmania and Kirghizia.² For the building of a happy and prosperous Pakistan, which

¹ Mian Iftakhar Uddin's election manifesto in Punjab provincial elections, *People's Age*, Bombay, 10-2-'46.

² See L. Barnes : *Soviet Light on the Colonies*, pp. 256-86.

above all, would aim at giving a fair deal to the common man in the best traditions of Islam. We will have to learn many a lesson according to our own needs.

But here an important fact of the Indian political situation may be pointed out. The country is on the eve of historic events ultimately leading to freedom from foreign control. In this anticipation the plan of the indigenous capitalist seems to be a simple yet a clever one. In the first instance he wanted the Congress to win the elections and thereafter capture political power. Then he cried loudly for the removal of all controls, so as to reap larger profits and be able to ask British Big Business to combine with him to share these profits rather than compete against him. The Birla—Nuffield and the Tata—Imperial Chemical agreements and other similar deals illustrate this amply. In the political field, these interests are backing up the Congress to talk compromise with White Hall and expel all leftist elements from within its ranks; to profess what is apparently the Gandhian philosophy of trusteeship of the poor by the rich; and finally, when the time comes, to argue that the Indian ‘backwardness’ does not permit of state planning on socialist lines. That will put monopoly capitalism completely in the saddle.

The people of India (whether in Hindustan or Pakistan) should guard against these developments and foresee this danger as a menace to their future happiness and well being. This game of the Indian capitalists, which certain sections of the leadership of the Congress seem to support, has already received the denunciation of

Burmese and Indonesian nationalist leaders in view of the possible exploitation of their countries. It must be defeated. It is the duty of every true Muslim to visualise a different kind of Pakistan—a people's Pakistan.

The prejudiced economist, historian and politician does not fail to picture Pakistan as some kind of a rigid theocratic state in which the Muslims would force their religious obscurantism upon all non-Muslims. Has this ever been the case? Perhaps such a horrifying conception is only a product of their imagination. It certainly cannot be substantiated from the history of Islam. Moreover, it must be realized that the Pakistan idea is a political concept rather than a religious one.

Pakistan and Hindustan are not envisaged existing side by side in a state of mutual hatred but in close co-operation on a free and equal basis. Thus the re-integration of India must come through an organic relationship based upon the amity and goodwill of the two independent states. Those well-wishers of India who are not obsessed by a sentimental belief in the inviolable geographical—cum—political 'unity' of India; hope that the two states so constituted will then impelled by common interest work together on matters of defence and foreign policy, if they so desire. Whatever turns out to be the future of India—a confederation, or an entente or separate nation states, or a union of an alliance of sovereign and independent democratic states, it should be accomplished in as just a manner as possible. For nothing permanent was ever built on injustice.

'Rome was not built in a day' goes the saying. But man's indomitable will made it a reality. So will be with the material well-being and the economic development of Pakistan. It will take time to build, but given the prerequisites of freedom, opportunity, initiative, courage, vision and the will to succeed, it may be achieved sooner than imagined.

The above pages have been primarily written to explain some aspects of Pakistan which it is necessary to understand, in order to build the future of India on a basis of mutual agreement between the two great peoples of this sub-continent—the Hindus and Muslims.

Epilogue

Much has happened since most of the material contained in the previous chapters was given shape, therefore, a few final words are called for.

This story of recent days is packed with incidents and events of far reaching consequence. But the tragedy is that India once more faces an ugly stalemate and remains marooned in the quagmire of a stifling political deadlock. Nevertheless, the situation is explosive and fraught with dangerous possibilities.

THE POLITICAL SCENE

Politically, most kaleidoscopic changes and shifts have been witnessed in the past few months. But the sum total is this, that Muslims, overwhelmingly united under the banner of the Muslim League, declare that their cherished goal is the establishment of Pakistan, while practically all shades of Hindu opinion, expressing itself through the Congress, is deadly opposed to that conception of India's future.

Before the Cabinet Mission left for Britain, it refused to entrust the formation of the Interim government to the Muslim League. No sooner the League had recovered from the shock it passed its famous resolution

of Direct Action at Bombay in July. August 16th, 1946 was fixed for a country wide demonstration to express disapproval with Britain's attitude to the aspirations of the Indian Muslims. In fairness, it must be said that the authors of the resolution did not declare this observance to be directed in anyway against the Hindus. What followed is a sad chapter in India's recent history and needs no comment. Communal passions of the worst kind were let loose during the Calcutta Riots (August 1946) and a similar fire burst out in Western Bihar, when a whole Muslim village of Beniabad was reduced to ashes. In quick succession, thereafter, were enacted the tragedies of Eastern Bengal (Noakhali) Northern Bihar and Garhmukteswar (in U.P.). In the meantime, on the eve of the Calcutta carnage, the Viceroy chose to call the Congress to form the Interim Government. Unfortunately, the Muslim League was asked to join this set up when already rivers of blood had flowed.

Mr. Liaqat Ali Khan the new Finance Member and the leader of the Muslim League group declared: "The Muslim League has decided to enter the Central Government in the interest of Muslim India and the peoples of this vast sub-continent," and he added in the course of a press conference: "Pakistan means freedom both for Hindus and Muslims and security and justice for the minorities. As long as we believe in the real independence of India, in orderly progress in this land, we cannot give up Pakistan It will be the determined effort of my colleagues and myself of the Muslim League—it will be our first duty—to take steps to ameliorate the conditions of the masses, whose interests

have been criminally ignored in the past. Every action that we take, every policy that we follow, will have that background."

Early in December '46, the Congress and the League top-notchers were invited to a conference in London with the representatives of the British Cabinet. This step was taken in view of the impending commencement of the session of the Constituent Assembly. Sardar Patel did not go across the seas to participate in the discussions but instead made strongly worded speeches against the possible motives of the Muslim League and declared that no useful purpose would be served by the London talks. On December 6, the British Cabinet made its long awaited declaration with regard to voting procedure in the Constituent Assembly, maintaining the view that the decisions of the Sections should, in the absence of an agreement to the contrary, be taken by a simple majority vote of the representatives in the Section. They also added that without the participation of a major political party (obviously referring to the Muslim League) the decisions of the Constituent Assembly would have no meaning.

The Congress reacted strongly to the statement and called it a dangerous document. It was even dubbed as 'Pakistan in purdah'. The pronouncement was considered in India and abroad as a signal triumph for Mr. Jinnah. Pandit Nehru with the Sikh leader Sardar Baldeo Singh hurried back to India to get the Constituent Assembly going even without the Muslim League participation.

The Constituent Assembly: The outstanding feature of the commencement of the work of the Constituent Assembly was the Nehru Resolution declaring firm and solemn resolve to proclaim India as an independent, sovereign republic and to draw up for her future Government a constitution. "The territories that now comprise British India, the territories that now formed the Indian States and such other parts of India as are outside British India and the States, as well as such other territories as are willing to be constituted into the independent sovereign India", shall form a Union of them all. Of course, there was a chorus of approval to support the resolution, nay, the sole delegate of the Hindu Mahasabha, affirmed most warmly the hundred per cent representative character of the Assembly. Indeed, he was loudly applauded (*Calcutta Statesman*, December 18) by all sections of the house! However, there were tabled no less than 40 amendments. But with the exception of Jaykar's amendment, which deplored the non-participation by the League and asked the Congressmen to wait and ponder, the rest were meant to be only minor alterations to the original resolution.

The break in the proceedings of the Assembly was utilized by the Congress to assemble a meeting of the A.I.C.C. at Delhi. In a resolution that body declared its acceptance of the British interpretation of December 6 and a desire for the participation of the Muslim League in the Constituent Assembly. But almost in a chorus the Congress leaders big and small, from the eminence of Mr. Gandhi to the humble district representative, declared against the fundamental procedure of voting in Sections by simple majority. It seem-

ed as if that political party was speaking with two voices, one addressed to India and the world in general and the other to its own supporters.

The League reaction was registered by calling the meeting of its Working Committee at Karachi on 29 and 30th January 1947, though the Constituent Assembly was to resume its sitting on 20th of that month. The Congress deplored the Leagues arguments and soon after reassembling, the Assembly passed the Nehru Resolution unanimously and the whole issue of the Muslim demand for Pakistan was circumvented by the Pant Resolution on minorities.

Spectacular events have since taken place and it is yet too near to visualise the repercussions. There is widespread labour unrest in most Congress provinces, their governments have taken action against the Communists and last but not the least, in the Punjab, the banning of the Muslim National Guard organization has resulted in the passive resistance and arrests of the top ranking Muslim League leaders and the defiance of the ban by processions in most of the province.

MUSLIM LEAGUE'S KARACHI RESOLUTION

It was in this atmosphere that the League Working Committee met in Karachi at the end of January. It

decided to refuse to join the Constituent Assembly and argued on the following lines :

1. The Constitutional Plan formulated by the Cabinet Mission has failed because the Congress has not accepted the statement of May 16. Therefore, the Constituent Assembly should be dissolved forthwith.

2. It characterised the A.I.C.C. resolution as :
 "No more than a dishonest trick and jugglery of words by which the Congress has again attempted to deceive the British Government, the Muslim League and public opinion."

3. It maintained that the Congress which is dominating the Constituent Assembly has taken decisions on principles and procedure exceeding the limitations imposed by the statement of May 16, 1946, on the Assembly's functions and powers at the preliminary stage which impinge upon the powers and functions of Sections.

4. Thereby :- "The Congress has converted that truncated Assembly into a rump and something totally different from what the Cabinet Mission had provided for.

At the end of the above meeting the Bengal Premier, Mr. H. S. Suhrawardy declared : "If India wants independence, there should exist an agreed constitution, which can only be framed if the Congress creates confidence in the minds of Muslim Leaguers. The agreement should be between the parties concerned and there is no use relying on a third party for it." The impres-

sion of the non Muslim and the so-called non-partisan press was, that the Congress is bent on proceeding with the work of the Constituent Assembly and will resist any attempt at dissolving that body with all its might (*Calcutta Statesman*, 1st February, 1947).

THE ECONOMIC SPHERE

In the economic sphere, since these pages were written there has been a growing support for some of the ideas suggested in these pages with regard to the future economic structure of Pakistan and Hindustan. A growing tendency to advocate the restriction of private ownership is being witnessed. The strongest suggestions were made by several eminent scientists at the 34th session of the Science Congress, especially in the course of discussions at the Symposium on National Planning at Delhi in the first week of January this year. Indeed, Pandit Nehru himself gave expression to these ideas at various meetings in this connection. Transport, minerals and water resources were pointed out as fields for early attention for state-ownership. One significant instance has been that of the civil aviation conference at New Delhi, early in February when Sardar Abdur Rab Nishtar (Muslim League) Member of Communications, said that he had never concealed his preference for nationalization. Earlier, prior to the participation of the Muslim League in the Interim Government, the Congress spokesmen

had declared that the time was in opportune for nationalization and supported the case for private ownership. Here a relevant question may be asked why should all the National Laboratories be set up in Hindu majority areas? These efforts will pay handsome dividends in terms of scientific and technical ability, therefore, they should be more equitably distributed.

Schemes are being formulated in U.P. and Bengal for the improvement of the lot of the peasant masses. The Pakistan lands need not lag behind in taking such ameliorative steps. For, both to Pakistan and Hindustan improvement of agriculture will be of fundamental importance and such ends cannot be achieved with a poor and impoverished peasantry.

The author's suggestion about the increased possibilities of the mineral oil resources of Pakistan seems to be justified by the latest news. Lakhra 150 miles from Karachi, in Kotri district, will be the scene early in February of oil prospecting operations, which are now being resumed both in Sind and the Punjab. Two seismograph parties reached Karachi in the 2nd week of January 1947. Tests of wells to a depth of about 7,000 ft. have been carried out at Chakwal, south of Rawalpindi. According to oil geologists the sites have been chosen after intensive investigations and it may be necessary to drill as deep as 8,000 to 10,000 ft. Dr. D. N. Wadia has recently suggested drilling up to 15,000 ft. with new methods.

BOUNDARIES AND MIGRATION

Lastly, during recent weeks many views have been expressed on the problems of adjustment of boundaries and the need for migrations.

As a counter to the Muslim demand of Pakistan several schemes of adjustment of boundaries have been suggested in preference to the existing provinces. The demand for a 'Sikhistan' which would embrace not only the Sikh homelands in Eastern Punjab, but also large slices of Muslim majority districts in Central and Southern Punjab, has been put forward. But as has already been shown elsewhere, the Sikhs do not even constitute a majority in the triangular pattern of population in Eastern Punjab. Their demand, therefore, of a separate Sikh State is incompatible with the principle of preponderance in numbers. Indeed, as was recently declared by the President of the Punjab Muslim League, the Sikhs shall be happier in the future state of Pakistan than in the present scheme of things.

The case of Assam and its future in the new constitutional set-up, has caught the headlines in the daily press during the past few months. The point of view of the Assam Hindus (of course, represented by the Congress) is based upon the fear of a Muslim preponderance in the proposed Section C or in the event of the establishment of Pakistan. This fear has developed into a veritable panic and the Congress leadership has, it seems, been hysterically overstating the case for self-determination and separate existence. Even Mr. Gandhi has repeatedly administered advice in such words: "If

Assam keeps quiet, it is finished. No one can force Assam to do what it does not want to do," and "As soon as the time comes for the Constituent Assembly to go into Sections you will say: gentlemen, Assam retires!" It has already been shown that the Hindus have the barest of majority over the Muslims in that province, if the tribes are excluded. The tribes themselves have not had the occasion to indicate their attitude towards the Hindu Muslim antagonism in the province. However, considerable sections of them have of late shown a growing realization of their destiny in relation to their economic and social betterment and political freedom. Indeed, it is too early to gauge the trend of their sympathy with the major political parties in the rest of India. A small independent, 'Hindu' Assam, with its nucleus in the Brahmaputra Valley is both economically and politically impossible. Its future is interlinked with the economic and the political life of Bengal—it is dictated by geography and commonsense.

This brings us to the future of Bengal itself. Apart from the idea of a Eastern Pakistan, comprising Bengal and Assam, where a Muslim majority will be recognised as a fundamental basis of the structure of that state, two more schemes have been put forward in recent days. One is the idea of a 'Greater Hindu Bengal,' comprising Calcutta, the Presidency and Burdwan Divisions, Jalpaiguri and Darjeeling districts, western part of Rajshahi Division and the Bengali speaking areas of Assam and Bihar. This would leave a small agrarian area of Eastern Bengal, labelled as 'Muslim Bengal.' Of course, to say the least, it is an attempt of unyielding Hindu nationalism to conceive of a state in defiance

of geographic and cultural, ethnic and historical realities. The main purpose being the negation of Pakistan. Muslims are not likely to consider this scheme as relevant to the political issues at stake. Meanwhile, Mr. Abdul Hashim, Secretary of the Provincial Muslim League, is reported to have discussed with Mr. Sarat Chandra Bose the question of organising a 'common front' in support of a movement for the delimitation of the province on a linguistic basis to form a 'Greater Bengal' by the annexation of the Bengali speaking areas in Bihar and Assam. Here once more the test would be the recognition of the Muslims as the preponderant element. Unless this is mutually recognised it is doubtful whether the idea would be acceptable to them.

The question of the future of northern Arakan (geographically and economically a part and parcel of the adjoining area of Bengal) has been a subject of burning controversy. One Maulvi Zahiruddin Ahmad who was 'President' of a 'Republic' of the Buthidaung and Maungdaw areas during the days of resistance to the Japanese invaders in the last War has asserted that 99 per cent of the population of northern Arakan had close cultural, racial and religious affinities with the people of Chittagong and that during the War the Burmese were hostile to the Muslims of this area and indulged in mass massacres. He has, therefore, suggested that the people of northern Arakan should be given the right of self determination and that a plebiscite should be held to determine whether that Muslim area should continue to be in Burma or should be joined to Bengal. Obviously, a very democratic process has been suggested. Northern Arakan is important to Bengal

as a granary and in the event of the establishment of Pakistan its economic and strategic significance will be great. U. Aung San has recently discussed the matter with Mr. Jinnah in Karachi and the 'status quo' has been accepted for the time being, but this is an issue which is likely to crop up for decision later on.

The problem of migrations necessitated by the recent communal disturbances and no doubt as an operation relevant to the future adjustment of boundaries between Pakistan and Hindustan, has recently been a subject of hot controversy. The Hindu opinion has declared itself wholly against any contemplated migrations and has called it unnatural, barbarous, undesirable and unwise, while the Muslim spokesmen have declared its desirability both in the present as well as in future. It need only be pointed out that migrations are indeed a painful process, but born of extreme necessity and the post-war transfers of population on a large scale in central and eastern Europe indicate it in certain respects as an essential step to create political harmony. Perhaps, one of the most balanced views in the matter was taken by Mr. H. S. Suhrawardy the Bengal Premier in a statement at Karachi on 30th January '47: "An exchange of population can only be brought about by agreement and can only be on a planned basis. But no one can avoid migration of people who have been oppressed and against whom inhuman brutalities have been perpetrated so that they have nothing to fall back upon and no possible sense of security." This problem should be faced with cold reason not sentimental hysterics.

JINNAH'S CONTACT WITH THE ARAB WORLD

Finally, two other most recent developments need mention. While in London in December last, Mr. Jinnah made several important statements with regard to the Muslim demand of Pakistan. He said: "The goal of complete independence was Pakistan. It pre-supposes that Hindustan should also be a free state." He further assured his audience: "Believe me, we think an amicable and peaceful settlement is far better even if we have to sacrifice something substantial for it." On his way back to India, he stayed in Cairo for several days and met most of the outstanding leaders of the re-awakened and alive Arab world of the Near and Middle East, including Haji Amin al-Husaini Mufti of Palestine, King Faruq, Nahas Pasha, Azam Pasha, Nograshy Pasha and members of the Palestine Arab Higher Council. Telling them about the Indian Muslim's demand for Pakistan he declared: "I am also anxious that Egypt should understand what Muslim India is struggling for and how important it is for Egypt if we succeed in achieving Pakistan, and how dangerous it is if we fail. Otherwise there will be the menace of a Hindu imperialist 'raj' spreading its tentacles right across the Middle East." Earlier he had made friendly references to Russia and visualised the place of Pakistan in the bloc of states working for peace and progress.

WHAT OF THE FUTURE ?

The London Conference and its sequel in terms of the Congress and League resolutions

and the progress of the Constituent Assembly have left the Indian political deadlock exactly where it was. It presents a most depressing scene. Unless solution is sought along the lines indicated in this survey viz., recognition of the Muslim demand of Pakistan on the basis of self-determination, and in that context political boundaries are drawn with due regard to cultural and geographical realities, all resting on the firm foundation of complete freedom from foreign rule, mutual goodwill and internationally, support for forces working for peace and progress; an indefinite period of chaos and civil war seems in store for this sub-continent. It is difficult to foretell the future.

NAFIS AHMAD

ISLAMIA COLLEGE
5th February, 1947.

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